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MacAddict

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MAY 2001 NO. 57

HOW TO GET HIGH-SPEED INTERNET

Throw Away Your 56K Modem

- DSL Versus Cable: Which One Rules
- How to Set Up and Fine-Tune Your Connection
- Hook Up Multiple Macs to the Same Line
- Protect Yourself Against Online Intruders
- Locate Broadband in Your Area

Plus

The 8 Questions You Must Ask Your ISP

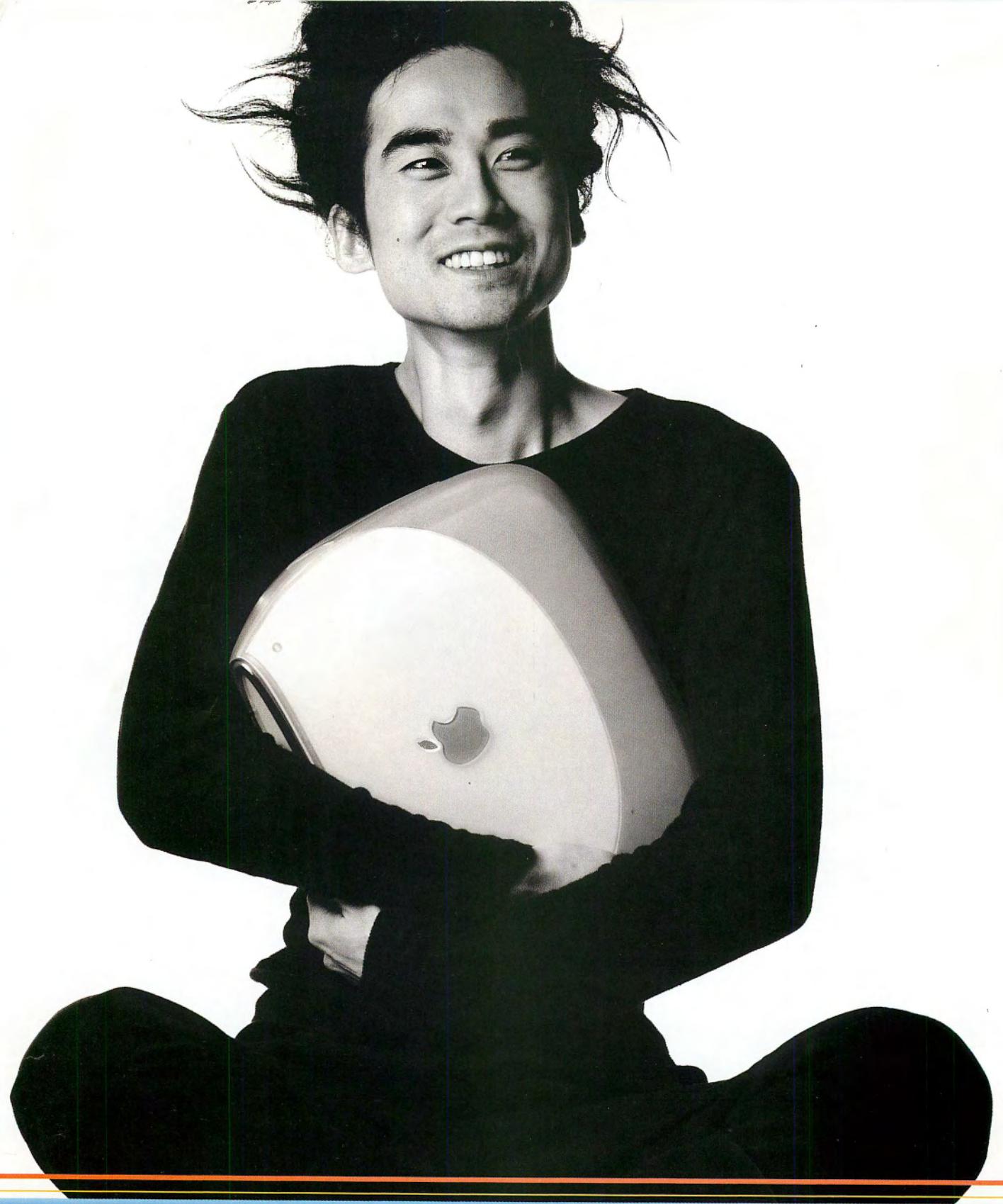
REVIEWED: PowerBook G4, Premiere 6, USB Zip 250MB, Rogue Spear, Sin, plus the latest printers



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Skater 2!



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Pan

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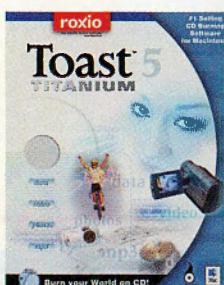
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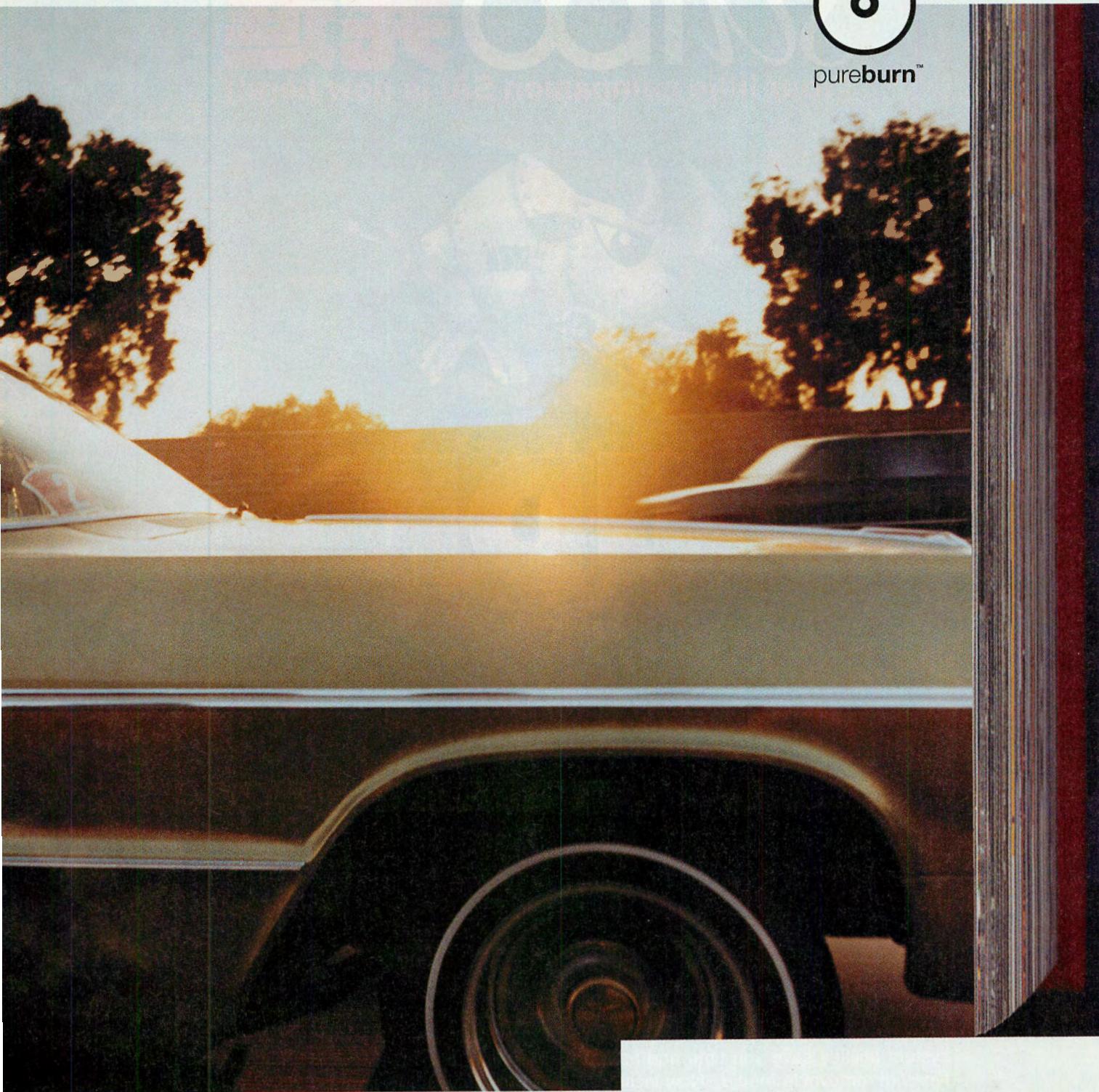
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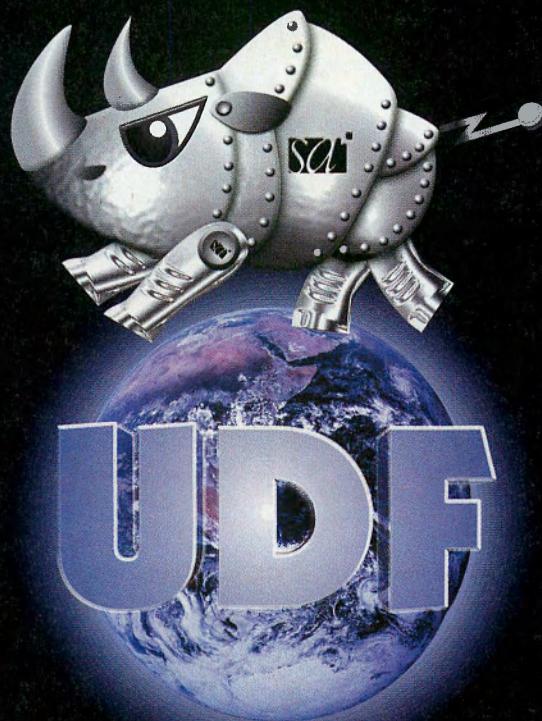


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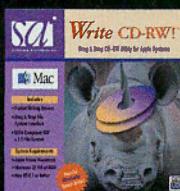
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No. 57 May 2001 Volume 6 Issue 5

MacAddict

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highlights

26 The Survival Guide to Broadband

The world of broadband can be an eerie place, filled with stories of ISP nightmares and more decisions than your brain can process in a 24-hour period. This month, we take the *broad* out of *broadband* by telling you how to choose between DSL and cable, pick an ISP, tweak your connection for faster speeds, secure your Mac from evil outsiders, and share your connection with multiple machines. After you hear our survival tales, you'll be telling broadband survival tales of your own.

by Dave Hamilton

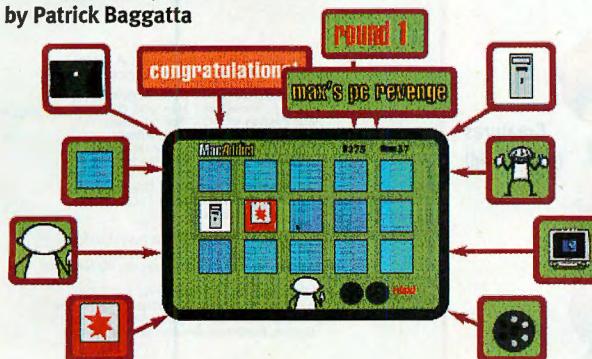


Treehouses have come a long way in the last ten years.

38 Game On

If you build it, they will come. Who are they? We're not sure. Nevertheless, we tell you how you can use Flash 5 to build your own cool-lookin', blast-to-play games. It's easier than you think.

by Patrick Baggatta



It's the future of third person shooters.

Next week on
Touched by an Angel: Monica helps a coaxial cable see the light.
Ron McPherson created this month's cover art.



REPRINTS

For reprints, contact RMS at 717-399-1900.

Volume 6, Issue 5

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how to

66 Land an Airplane

If you've been locking, loading, shooting, and ejecting, here's a step-by-step guide to bringing your bird back down to the ground safely.

by Jenifer Morgan

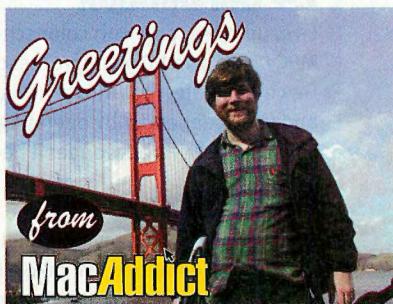
Sweaty leather is not just for musicians.



72 Fix Flaws in Any Photo

You've just taken a picture of your friends and are about to upload it to your Web site when a problem suddenly becomes apparent. Judging by your photo, you have singularly ugly friends. Here's how to get your friends looking their best, without taking them in for makeup.

by Kris Fong



Attack of the 50-foot Ian!

76 Print to Non-Mac Printers

Typical—you get a great printer, but instead of a USB connector it has a monstrosity on its back that looks a bit like a midget SCSI connector. Here's how to hook it up and get printing.

by Ian Sammis



SUBSCRIPTION QUERIES

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every month

10 Editor's Note

When iMacs start looking like something you clean up off a bar's bathroom floor, it's time to count the *good* things Apple's done.

Man, I feel a bit broken up after that last trick.



14 Letters

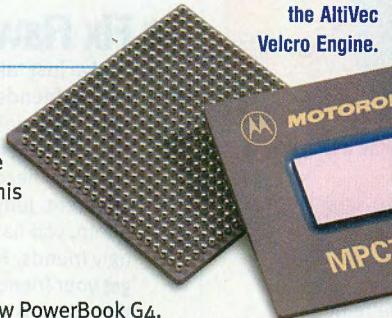
Telling us the good, the bad, and the very, very ugly.

18 Get Info

April showers bring May flowers, which bloomed on the iMacs introduced at Macworld Tokyo. An impromptu contest inspired some *MacAddict* readers to send us iMac patterns of their own. Plus, take a peek at the best graphics chip to date: nVidia's GeForce3. We put AirPort to a real-world test on the Golden Gate Bridge, and we tell you how to win a Tony Hawk original skateboard. Onward.

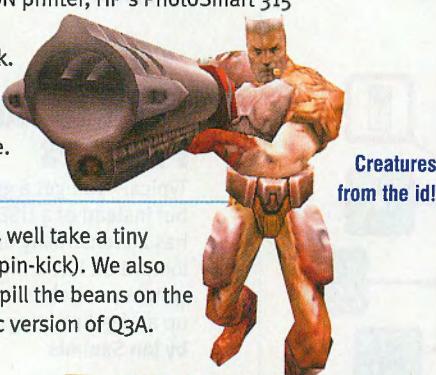
24 Scrapbook

Live, up close, and with color schematic, it's the MPC7450 PowerPC microprocessor—the sexiest G4 chip to date. Featuring a new on-chip L2 cache and four independently operating AltiVec units, this chip's so hot, it's no wonder it needs a fan.



46 Reviews

Sex plus power plus review equals pawing the new PowerBook G4. For the movie-minded, we take a look at Premier 6 and MovieWorks Deluxe 5. In the hardware slot, the Brother HL-1670N printer, HP's PhotoSmart 315 camera, Iomega's USB 250MB drive, and Contour's Shuttle Pro receive a probing look. Gamewise, Rogue Spear and Sin shoot it out. Plus, BeatWare's eZ-Motion, Griffin's iMic, MYOB's AccountEdge, and much more.



Creatures from the id!

64 Powerplay

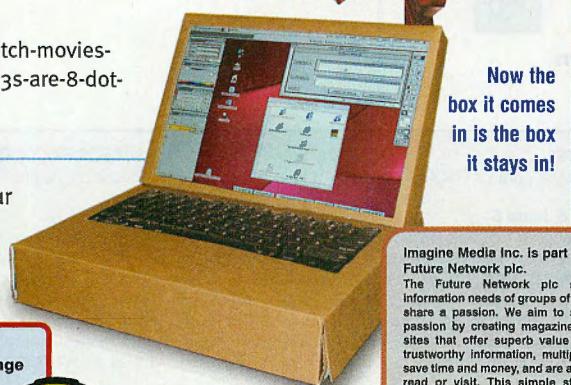
If Konoko's getting pretty dull, you might as well take a tiny glowing Griffin out for a spin (or at least a spin-kick). We also got our hands on id's Greme Devine and spill the beans on the massive updates it has planned for the Mac version of Q3A.

78 Ask Us

It's time to lose those can't-watch-movies-on-the-desktop-and-all-my-MP3s-are-8-dot-3 blues.

104 Shut Down

From Apple's dumpsters to your hands—after some sanitizing of course (yuck!).



We're late, we're late for a very important date! Blessed be The Lounge aka The Infirmary...a little sherry, anyone? No? How 'bout a lot?



MacAddict

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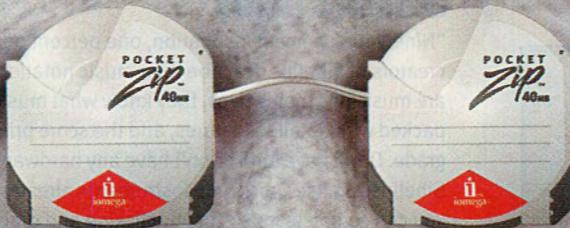
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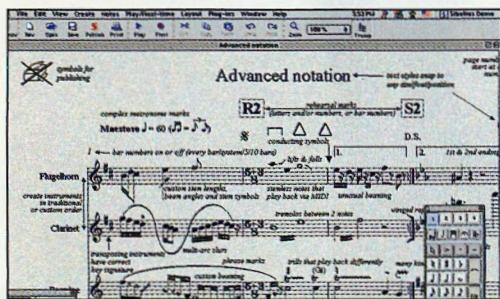
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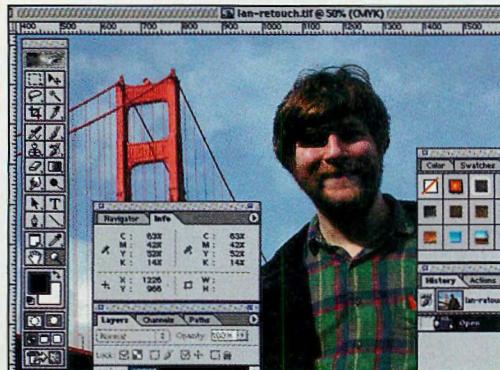
It sucks to be the tallest kid in class!



Unless you're planning on writing a concerto for tire rubber, Sibelius is the last word in music scoring.



It's Breakout with flair!



Test drive the world's undisputed champion of graphic applications.

The Disc In May

Diablo II Demo

If you still haven't played Diablo II, what are you waiting for? The demo, perhaps? Well, you asked for it. This sequel to Diablo is probably one of the most addictive games you can play on a home computer. Try your hand at being a barbarian in a cursed world of Wendigos, Fallen Ones, and Spike Fiends. If you like the demo, you're going to love the game, which includes animated cut scenes, five new character types, multiplayer action, and a plethora of levels and quests.



Sibelius Demo

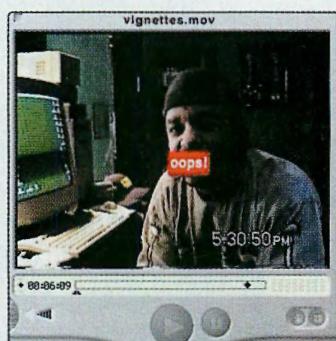
"Ninety-nine percent inspiration, one percent perspiration." That's how the creators of Sibelius describe their music notation software, and because they are musicians themselves, they know what musicians want. This program is packed with detailed features, and the score printouts are truly professional grade. Don't have MIDI? Don't have any hardware synthesizers? No problem. Sibelius can use QuickTime Instruments already installed on your Mac, and you can compose music just by clicking and dragging. Print out professional scores or publish them on the Internet.

Colibricks Shareware

Just another Breakout game, you might say. Oh, but this is a Breakout game like no other. Colibricks adds a new level of excitement to the classic genre by featuring multiple balls, non-horizontal brick patterns, collision detection (so balls can bounce off each other), bonus prizes like lasers and extra points, beautiful backgrounds, and stereo sound. Plus, it's pretty darn addictive!

Adobe Photoshop 6 Tryout

Let's face it, when it comes to working with graphics on the Mac, nothing compares to Photoshop. It's a standard. With version 6, you can construct vector shapes inside the program. This powerhouse also boasts a much more intelligent Type tool, a context-sensitive toolbar, image warping, image-slicing for the Web, and a whole lot more! Now how much would you pay? Before you answer that, try out the demo on The Disc.



What is Ice-T saying? The clip is so funny, it really doesn't matter. You can also say that about the rest of the staff video—a collection of snippets no one was ever meant to see, found lying around the MacAddict offices.

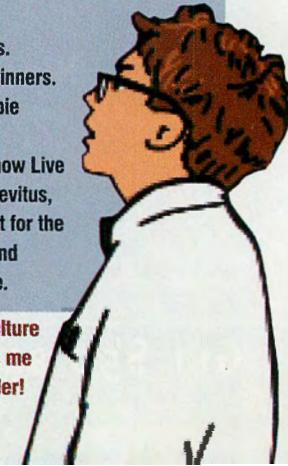
Bonus!

Every month we put bonus materials on The Disc for you to check out.

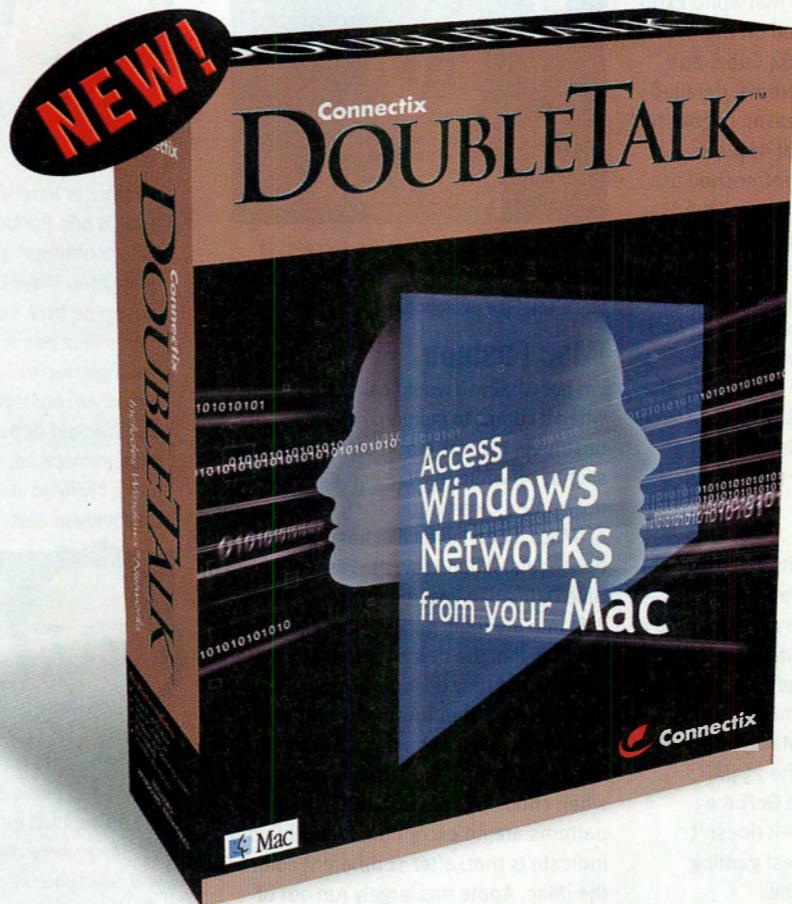
This Month:

- May Nitrozac Comics.
- Pixelpalooza 2001 winners.
- REAL Software's Cubie Award winners.
- An exclusive Mac Show Live interview with Bob Levitus, author and columnist for the Houston Chronicle and MacCentral Web site.

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 **Connectix**

editor's note

Another expo, another product line.

Besides torrential downpours, spiking natural-gas prices, and plum trees going into full blossom, spring marks another special occasion in Cupertino—the introduction of an updated line of hardware at the Tokyo Macworld Expo show. This year, Apple showed off the nVidia GeForce3 card, updated the G4 Cube, and introduced two new iMac patterns, detailed on page 18. This set of midseason tweaks to the Macintosh line shows that Apple's digital hub strategy is firmly entrenched in the company. (This strategy features the Mac at the center of all kinds of electronic devices, such as MP3 players and camcorders.) It also happens to be the right decision. (But if I hear the words *digital hub* from one more Apple employee...) Of the announcements Apple made this spring, the GeForce3 revelation is probably the most important, but the one people are talking about most is the look of the new iMacs.

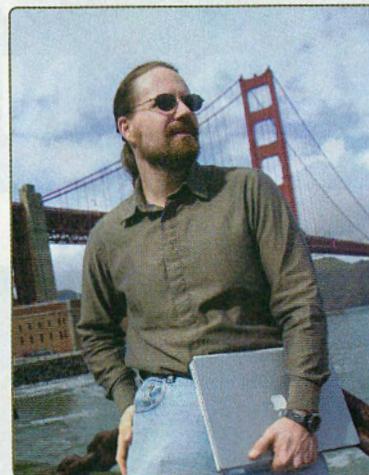
GeForce3

Apple showed off the not-quite-released GeForce3 card and demonstrated how this formerly PC-only powerhouse graphics chip is going to *own* the graphics market. The kicker is that Mac users will get this ultrafast graphics card before the PC market does. This is an amazing coup for Mac gamers—for one brief, shining moment, the 733MHz Power Macintosh G4 with the GeForce3 (you'll pay more for the card—it doesn't come standard) will be the best gaming system on the planet, bar none.

This is huge news, folks, and it's refreshing to get something this cool before the dark side does—proof that Apple is making the right partnerships and bringing the hardware and software Mac users want and need to our market.

New Cubes

After a brief and somewhat disastrous flirtation with treating the G4 Cube as an alternative to the Power Macintosh G4 tower, Apple has shifted its Cube thinking to viewing the hexahedron as a high-end alternative to the iMac, a much more suitable perspective. The updates to the G4 Cube include a lower price and an optional CD-RW drive, just like in the iMac line and low-end G4 towers. As an iMac alternative, the Cube is going to do just fine. Now, if Apple would only tint the plastic...



The PowerBook's not mine, the sunglasses aren't mine, but don't I look cool? At least that's what the photographer told me.

iMac Fashion

I'm not what you would call cutting edge when it comes to fashion. I like my shirts unstriped, my cars black, and my walls slightly off white (maybe *ecru*). I am clearly not Apple's target audience for the new line of iMacs. I don't even like floral-print bedsheets. When I saw the Flower Power and Blue Dalmatian iMac patterns, I called my wife into the room and we had a good laugh. I will say that the new patterns look better in person, and they do grow on you.

The thing about Apple's color choices is that while they're sometimes risky, they're not lightly made. Apple takes great pains when choosing colors, and the new patterns are no exception. What this does indicate is that, after 11 different colors for the iMac, Apple has largely run out of options when it comes to pushing the hue envelope. That is, unless the company starts making pastel iMacs, and I don't think *anyone* is ready for that to happen (except for the Easter bunny, and he's not even a citizen).

So the next logical step is patterns, and that's a whole different dimension of risk. While it's easy to hit on a few colors that a lot of people will like, it's much more difficult to hit on a few *patterns* that will be equally popular. This is why, don't forget, Apple held onto its appealing Indigo and Graphite iMac colors. There will be iMac designs for all, from the staid (myself included) to the wild. And even if only three people buy Flower Power iMacs, the mere presence of the machines is enough to get people talking about Apple—even if the phrase *butt ugly* comes up.

Staff Rants



Chris Imlay

No-Not-the-Band Associate Art Director

Q. *What was your biggest fashion faux pas ever?*

A. Everyone seems to think my trouser length comes from the time of Noah's ark. I'm berated for said "shortcomings" at home and even in this magazine. There is nothing finer than a subtle stovepipe trou, hemmed to the ankle. One man's faux pas is another's *dépêche mode*.

Q. *If you were chemically impaired, how would you paint your iMac?*

A. It would depend upon the chemical. If I were intoxicated, I would probably attempt to make my iMac look like something on the *Discovery in 2001: A Space Odyssey*.



Andrew Tokuda

Too-Warm-on-Hot-Days Editor
Q. *What was your biggest fashion faux pas?*

A. Mark Simmons—wannabe garb with industry-standard black T-shirt and black denim pants. Not so bad in the office, but I get strange looks at the beach.

Q. *If you were chemically impaired, how would you paint your iMac?*

A. Doesn't Kool-Aid leave your tongue colored? Maybe I can use that.



Ryan Adams

Associate Starbucks Editor
Q. *What was your biggest fashion faux pas?*

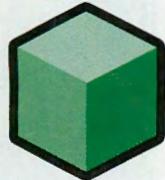
A. In my younger years, I remember having a fascination with the Teenage Mutant Ninja Turtles. I'm not going to say anymore, as the memory is painful.

Q. *If you were chemically impaired, how would you paint your iMac?*

A. Whichever color my addled brain chose, it'd be a really sloppy job—as my hands would be shaking uncontrollably from the insane amounts of caffeine I'd have ingested via Jolt, coffee, and chocolate-covered espresso beans.



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Power



Presenting the new Power Mac™ G4 – the first personal computer that creates custom DVDs playable in ordinary DVD players. This unprecedented feat is made possible by two Apple breakthroughs: the aptly named SuperDrive, an industry-first DVD-R+CD-RW drive that burns both DVDs and CDs. Plus iDVD, Apple's revolutionary new software that lets you create DVD titles so simply it's, well, revolutionary. Together with iMovie or Final Cut Pro® (sold separately), you've got your own Hollywood production company. And to burn your own soundtrack CDs, there's Apple's new iTunes® – the world's most advanced yet easiest-to-use digital music software.

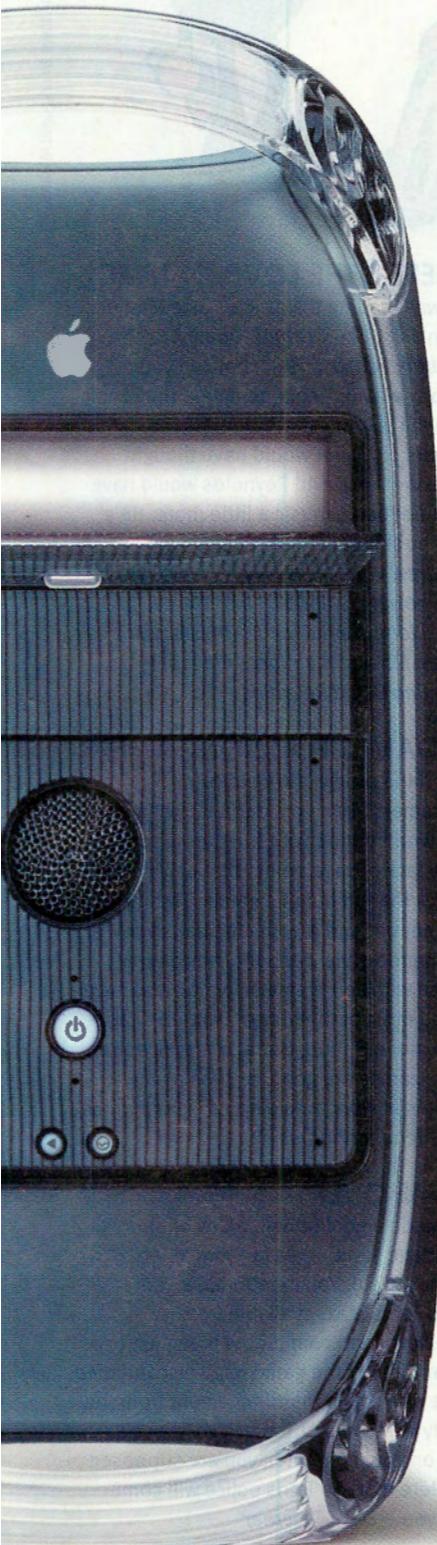
Of course, there are other significant changes on the Power Mac G4 to help you take advantage of this amazing technology. Like an NVIDIA GeForce2 MX graphics card, a dramatically faster system bus, five slots (one super-fast AGP 4X graphics and four high-performance PCI slots), built-in Gigabit Ethernet, plus AirPort, FireWire® and USB ports.

All this is combined with a phenomenally powerful G4 processor. With sustained speeds of up to 5.5 gigaflops (performing up to 57% faster than the new Pentium 4®), the new Power Mac G4 has more than enough power to burn CDs, DVDs and – oh, yeah – Pentiums.

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KUDOS TO MACPLAY

I picked up *Sin Gold* and *Majesty* after test-driving the demos on *The Disc* (Mar/01), and I am very impressed. I expected low-quality code and a rushed packaging job, but everything about these games is top-notch. Both games are remarkably stable, and they come with printed manuals. This is a testament to MacPlay's understanding of the Mac market and hardware. I encourage all Mac gamers and nongamers to check out the MacPlay releases or to at least try out the demos on *The Disc*.—Adrian M.

Recently Sighted



Five-year-old Diana Maria plays Blues Clues on a PowerBook G3 on a trip to Ft. Lauderdale last year before Christmas.

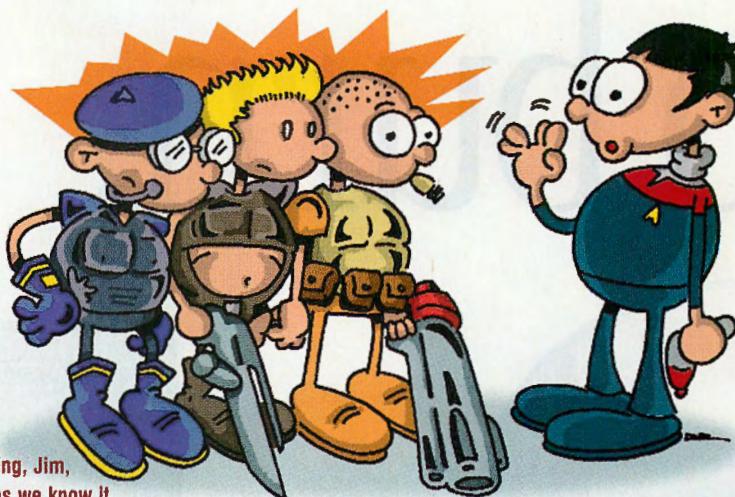
—Cristian David

My friend's son adopted an old Apple ADB Mouse, which he drags around like a pet. Now if only he could understand that the new Pro



Mouse is not just another cool toy for him to drag around.—Tim Fountain

It's gaming, Jim,
but not as we know it.



AN UNREAL BIAS

I felt like playing a game of *Star Trek Voyager: Elite Force*, and I found out about your game server. But why does it only support *Unreal Tournament* and *Quake III*? There are so many games for the Mac now, why can't I log into your server to play *Elite Force*?—Jim Robinson

*We only have one Mac on which to host games right now, and *Unreal Tournament* seems to be the overwhelming favorite. If we want to host *Elite Force*, then we have to stop hosting *Unreal Tournament*. We're still talking about working other games into the rotation.*—Ed.

WHATEVER WORKS

Hi. I'm not a Mac user, but I recently purchased a copy of *MacAddict* because Nitrozac, creator of the *Joy of Tech* and *After Y2K* comic series at www.geekculture.com, was on *The Disc*. Even though I had to find a Mac to access it, the bonus stuff on *The Disc* was great.—John

*Nitrozac and Geek Culture have been on *The Disc* every month since December 2000, so keep reading, and get a Mac.*—Ed.

BE CAREFUL WHAT WE ASK FOR

In your article "Cordless Keyboard Conundrum," (*Get Info*, Mar/01, p15), you asked what users could see while 25 feet away from a 17-inch monitor, typing via a cordless keyboard. You are obviously missing the big picture. I work at an ad agency where we project our computers onto a 72-inch screen in a presentation room. Currently, we run a 30-foot ADB homemade cable from the control room to the presentation room in cases when the presenter needs to control the computer. Wireless would be a much better option.—Bruce Smith (not the football player)

WHERE'S THE LOVE, DAMMIT?

As I was reading the article "Size Matters: Balancing MP3 Size with Quality," (*Get Info*, Feb/01, p15), I noticed your "sloppy playing" comment regarding Led Zeppelin's song "Black Dog." I am only 17 years old, but I would have thought someone like David Reynolds would have stuck up for his music a little more. He's just about got the hippy look down.

—Andrew Van Sickle

Now, now, let's not play into stereotypes. Not all long-haired men with peaceful expressions on their faces are hippies, including David Reynolds.—Ed.

23 GAMES FOR NONGAMERS

I loved the article "20 Games for Nongamers" (Mar/01, p40). I love games, but I won't put up with frustrating controls and a lack of save points that only serve to suck the fun out of a game. Give me a little flat bar and a bouncing ball over commando-style weaponry any day. I agreed with your game selection and have played most of them, but I wanted to add three more: *Snood*, *Barrack*, and *Spectre*. These games are good for passing five minutes at work or five hours of insomniac hell.—Jennifer Barnes

GAME OVER

You made a goof (albeit, a tiny one) in the article "20 Games for Nongamers" (Mar/01, p40). You mentioned a game called *Tetris Max*, available from www.download.com. Sorry! It just ain't so. The authors of the game have discontinued it due to a copyright infringement from the *Daddy War Lords of Tetris*. If you have a copy on your computer, you are supposed to delete it or the *Tetris* police will come after you.—Dave Taverner

TALK TO THE PALM

Excuse me? Is the title of this magazine *MacAddict* or *PalmAddict*? I subscribe to *MacAddict* because I am interested in reading articles by, for, and about Mac users. Palm Pilots? Get real. The article "Pack Your Palm" (Mar/01, p34) is just as bad as the photo layout piece "Look and Feel" (Jan/01, p24). Get off your lazy asses, and quit making it look like Ian Sammis and David Reynolds are the only ones who know how to write something useful.—*inthematrix*

AVOID THE PATH OF LEAST RESISTANCE

I noticed a mistake in the article "Light up Your FireWire" (Feb/01, p78). Ian Sammis recommended using 470 kilo ohm and 1 kilo ohm resistors; however, the color codes given for those resistors are for 4.7 kilo ohm and 10 kilo ohm resistors. Since those values are higher than what Ian stated in the article, this should not be a problem except that the LED might not light up. However, if these values were lower than what Ian recommended, it could have damaged the

FireWire bus if no fuse was used in the project.—*Sylvain Lareau*

We apologize for the mistake—the resistors should indeed have been yellow, purple, and brown; and brown, black, red—not the colors specified in step three of the article. We're glad the mistake was in the direction of higher resistance, too; but since this was purely happenstance, we aren't exactly proud of ourselves.—Ed.

AN ENTREPRENEURIAL OPPORTUNITY

Since the release of the Titanium PowerBook G4 and the 733MHz G4 tower, the Dual Processor G4s have gotten less attention. I was wondering if I could become a processor donor. (I'm also available for kidney transplants.) Maybe I could sell the kidney, I mean processor, on eBay so I can buy a new 733MHz SuperDrive G4.—*Jax*

OH NO, CALL THE POLICE

I love my Mac. I love using it and learning how it works, and sometimes I contemplate voiding my warranty to try out the staff's

goofy ideas. However, I just can't understand the fascination you guys have with listening to a celebrity tell his personal Mac story (*Get Info*, Mar/01, p16). In case my plea falls on deaf ears, maybe you could spend some time tracking down the guys who used to jam with Sting in The Police. I bet they're not too busy to take your call.—*Dave Traversi*

LOOK, BUT DON'T TOUCH

Are the pictures of those sleek computer close-ups ("Look and Feel," Jan/01, p24) accessible on the Web site?—*Mike*
We do not own the rights to those photographs, so we cannot distribute them on the Web or on The Disc.—Ed.

YOU LIGHT UP MY LIFE

I just love articles like "Light up Your FireWire" (Feb/01, p78). It fills me with optimism to know that jobs exist where a guy like Ian Sammis can get paid to muck around with bits of junk to make another bit of cool junk. It's great that space exists in society for such creative insanity.

—*Eleanor Deakin*

The Revenge of Ian's Desk

The staff video on The Disc (Mar/01) showed the evil higher-ups forcing Ian Sammis to clean his desk. Never did we predict that a routine spring cleaning would cause such an uproar. But packrats

rejoice—his desk regained its usual tenor of clutter in about one month. Here we not-so-scientifically analyzed the reclutterization of Ian's desk.

BEFORE



The slope of these books increases as it slowly slips away from its neat arrangement.

At least his computer remains visible.

Overall, while the density of clutter has decreased, the volume of each item of clutter has increased.

AFTER



ECO-CHALLENGED?

The staff video about cleaning up Ian's desk was a bit disturbing. Don't you people recycle? Everything was just dumped into garbage cans and stomped on. I would hope your staff is environmentally concerned and separates recyclables. Please tell me I'm wrong and you didn't just send all that paper and cardboard to the landfill.—*Paul Barker*
Yes, we do recycle. We threw everything into one bin for dramatic effect in the video. Not everything from that can went into the trash. Don't believe everything you see in the movies.—Ed.

WHO'S THAT MAC?

Is this a PowerBook or another Mac portable? I must know!—*Sean Dooley*
The item in question is a defunct PowerBook 190. Despite large cracks in the casing, Ian did not throw it away.—Ed.

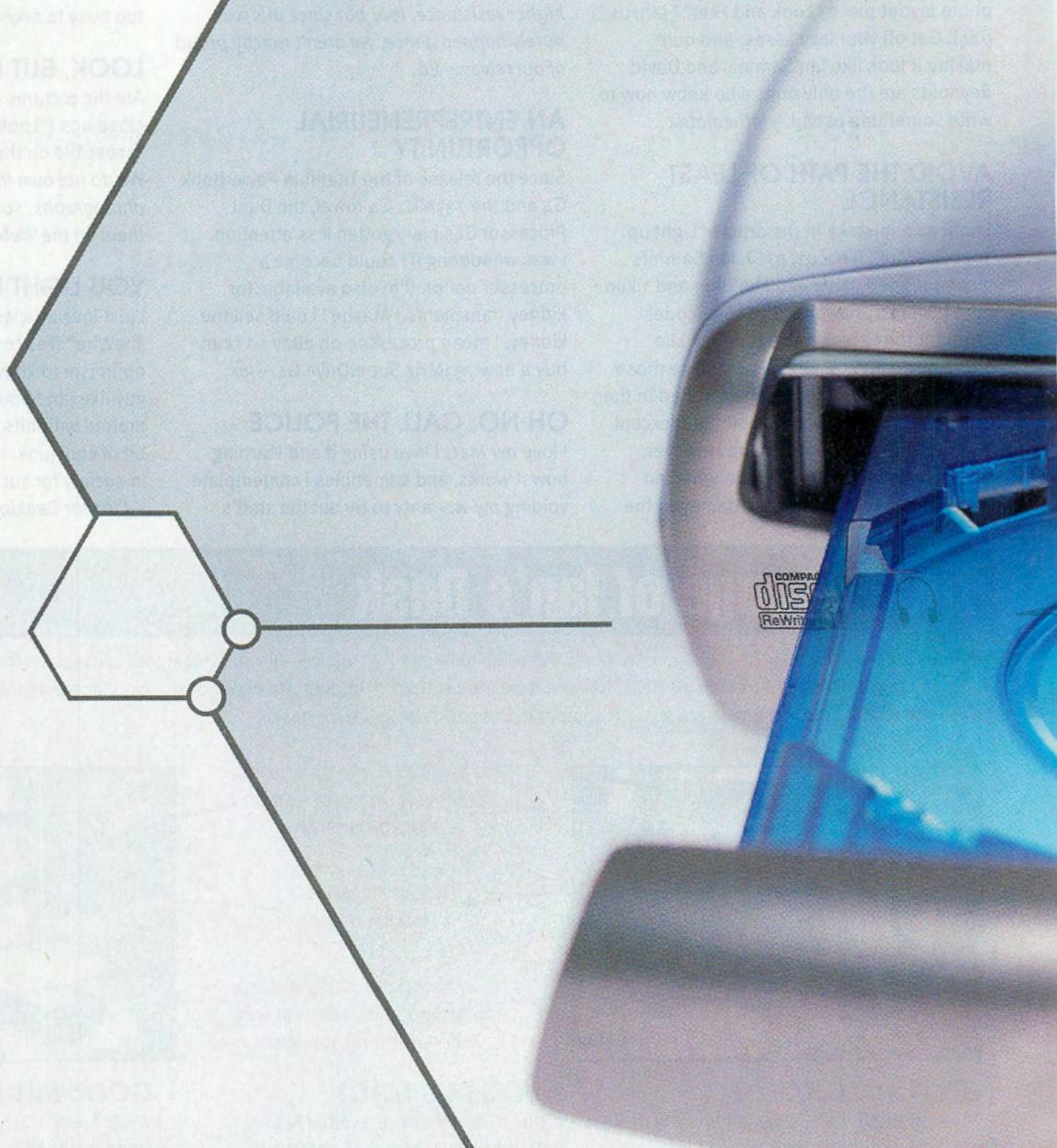


GOODWILL DUMPING

While I very much applaud the efforts to clean overloaded desks, I was terribly disappointed to see you throw away still sealed up boxes of software. Couldn't a single person there have suggested donating the software (especially the educational programs like the Blaster series) to a school, a community organization, or a charity such as Goodwill?—*Jeff Driscoll*
MacAddict either donates unused software or returns it to the software's manufacturer.—Ed.



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The ultimate performance burner delivers fastest-ever 40x rips and true 16x burns for perfect recordings every time. The external veloCD CD-RW burner works with all IEEE-1394 compliant Mac and PC systems. Discover the full line veloCD story at the sweetspot of digital recording, www.tdk.com.



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BURN-Proof
STOPS buffer underrun ERRORS

The Pattern Familias

Questionable Kitsch Overshadows Improvements in New iMac Family

We knew it had to happen someday. How long could Steve Jobs call assorted computer sundries *lickable* before some hapless Apple designer put his tongue to something he probably shouldn't have? Well, pity the Apple-ite with the overzealous taste buds—we can't offer any other plausible explanation for the patterns on the new iMacs.

If you've been griping that the Mac's Ruby, Tangerine, and Key Lime colors are far too corporate and stodgy, your mutterings have finally been heard. Alongside Indigo and Graphite (which Apple has retained, thankfully), Apple has added two new, "fun" colors: Flower Power and Blue Dalmatian. If you've only seen the new machines in photos, you haven't seen them at all. The trademark iMac translucency adds a strange, ethereal quality to both patterns. Flower Power, for example, looks suspiciously like the psychedelic shimmering cloud that imprisoned Zefram Cochrane in *Star Trek*.

Style issues aside, the substantive revisions to the iMacs are welcome. Apple has abandoned the feeble, underpowered \$799 iMac and replaced it with an \$899 machine that has the full complement of FireWire ports, AirPort antenna, and VGA video mirroring. The higher-end iMacs sport a modified Rage 128 (the Rage 128 Ultra) with a full 16MB of VRAM that should raise the iMac's gaming performance out of its current lackluster levels. The highest-end machine (\$1,499) sports a 30GB drive and a full 128MB of SDRAM. The line—all G3s—now runs from 400MHz at the low end to 600MHz at the high end (Apple still isn't putting its hottest chip into the convection-cooled case).

And there's one more monumental change: DVD is out, CD-RW is in. Apple decided to substitute an 8X4X24X CD-RW drive in all but the 400MHz models (which will still have the slot-loading CD-ROM drives). You can't even get DVD as a build-to-order option. On the plus side, burning CDs is now as easy on an iMac as on the new G4 towers—just slap your songs into iTunes, throw a blank CD-R into the drive, and burn away. What's more, data CDs are just as easy to burn. When you insert blank CD media, the system presents a disk image that you can fill, then burn to the disc.



Apple's muted floral bouquet reminds us of a Laura Ashley bedsheet.

In other news, the Cube received a facelift as well, but fortunately this one stays strictly within the 8-inch enclosure. Cubes now ship with CD-RW drives, although you can switch to DVD if you build one to order. The Cubes now ship at 450MHz and 500MHz and include a software bundle like the one that ships with the iMac. Previously, Cubes shipped with only the meager software bundle that comes with the G4 towers.

If you can stomach the new iMac colors (and honestly, they're not as bad in person as they appear in photos), you'll find that the other revisions maintain the iMacs' trademark mix of reasonable power at a reasonable price. But don't worry—no one is going to force floral madness down your throat. All feature options come in either Graphite or Indigo. Watch for a review of the new iMac in a future issue of *MacAddict*.—IS

Powered Flowers

Tech Specs for the New iMac Line

| Model | iMac (400MHz) | iMac (500MHz) | iMac Special Edition |
|---------------|-----------------------------|--------------------------------------|--|
| Price | \$899 | \$1,199 | \$1,499 |
| Colors | Indigo | Indigo, Flower Power, Blue Dalmatian | Graphite, Flower Power, Blue Dalmatian |
| Processor | 400MHz G3 | 500MHz G3 | 600MHz G3 |
| Level 2 Cache | 512K at 160MHz | 256K at 500MHz | 256K at 600MHz |
| Memory | 64MB | 64MB | 128MB |
| Hard Disk | 10GB | 20GB | 40GB |
| Optical Drive | CD-ROM | 8X4X24X CD-RW | 8X4X24X CD-RW |
| Graphics | Rage 128 Pro (8MB of SDRAM) | Rage 128 Ultra (16MB of SDRAM) | Rage 128 Ultra (16MB of SDRAM) |

The Rage 128 Ultra

When last we reviewed the iMac (Reviews, Nov/00, p49), we lamented its atrocious gaming performance, due to the anemic 8MB of VRAM attached to its Rage 128 Pro graphics card. Well, a new and almost unmentioned chip, the Rage 128 Ultra, has put an end to this problem for all but the lowest-end iMac users.

The iMac's design imposes tight space and thermal constraints. Without a fan, it has to dissipate all the heat from

both a motherboard and CRT by convection alone. The version of the Rage 128 Pro that supported 16MB of VRAM simply won't fit onto the motherboard without pushing up temperatures into the danger zone. Fortunately for iMac gamers, ATI shrunk the die size of their chip, creating the leaner, meaner, and (most importantly) cooler Rage 128 Ultra. While the chip is no GeForce3, it gets you playing most games smoothly and frees you from the stuttering performance of previous iMacs.—IS

The Power to Change

We challenged *MacAddict*'s readers to design their own iMac patterns and submit their entries at MacAddict.com. Here we've printed the best of what you created. See the rest in the Reader Art Gallery at www.macaddict.com/community/artgallery.—NR



Best Design—Winner

HotWheels iMac

by Snaggy and Nitrozac

This one was submitted by the creators of the *Joy of Tech* comic series, which you can view at www.geekculture.com/joyoftech. Give it some wheels and after-market rims—wooh, baby!



Best Design—Runner-up

Water-Cooled iMac

by François Dubeau

This iMac's translucent water tank does double duty as a fish tank and giant heat sink for the processor. Just fill the tank with tropical fish and the processor's heat will warm the water. Still no fan, but you'll need a gentle air pump so the fish don't suffocate.



Best Concept

The iMac LS (Little Steven)

by Rob Cottingham

The luxurious, understated comfort of ribbed turtleneck fabric on top, the rough-and-tumble excitement of denim on the bottom—all encased in durable, crack-free Lucite. Comes complete with a scale-model Gulfstream V.



Best AntiMac

Biomechanical Beastie

by Andrew Lenzer

The new designs coming out of Cupertino are nice, but a bit too cutesy for this reader, so he opted for a motif designed by Swiss surrealist H. R. Giger. Even if you've never heard of Giger, you've probably seen his sci-fi creations in Ridley Scott's 1979 movie *Alien*, starring Sigourney Weaver.



Best Chance of Receiving a Call from Microsoft's Legal Department

iMac Special "Bill in a Box" Edition

by Nathan Cross

Spend your days happily computing on your iMac, knowing that all the while Bill Gates is trapped inside where he can do no harm to anyone. Relax. He looks happy in there.

The GeSpot

Top-of-the-Line GeForce3 Spells Pure Pleasure for Mac Gamers

Hard-core gamers are no doubt squirming and fielding unchaste dreams in anticipation of the best 3D graphics processing unit (GPU) the Mac has ever seen: nVidia's GeForce3. This highly advanced chip will be available this spring as a built-to-order option on Power Mac G4 towers.

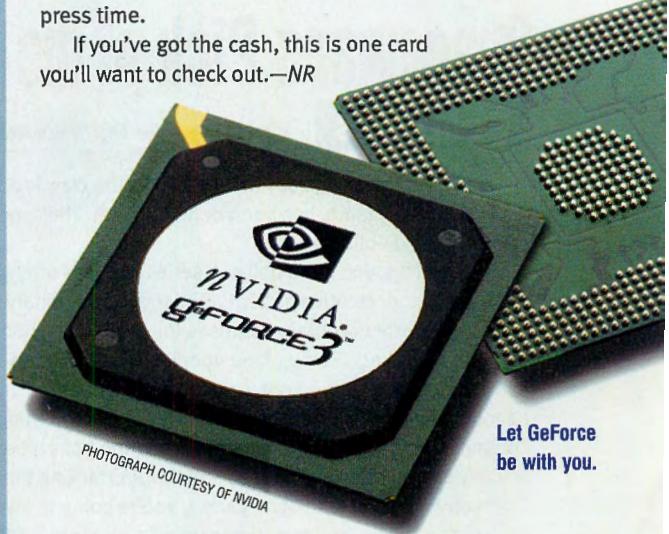
Let us bombard you with impressively large numbers. The GeForce3 features more than 57 million transistors. It can perform more than 800 billion operations per second and 76 billion floating-point operations per second. It offers you a fill rate of 3.2 billion antialiased samples per second—four times as powerful as nVidia's current GeForce2 chip. In this GPU, nVidia breaks the magic million target with its ability to manipulate up to 1.3 million pixels at once. Then there are the frame rates—even at high resolutions, you'll see rates around 60 fps in popular games like *Quake III: Arena*.

So what do all these big figures add up to? The best Mac gaming experience out there. The organic forms and complex lighting make 3D objects look more realistic. The chip's infiniteFX Pixel Shader and Vertex Shader give developers greater control over graphic details like facial wrinkles, beard stubble, and ultrarealistic color maps. You will also see more-fluid motion with nVidia's new antialiasing mode. With seamless landscapes, reflections on water, billowing fields of flowers, and flowing streams, the GeForce3 achieves graphic nuances that will appeal even to nongamers.

In addition, the GeForce3 (and GeForce2) chip has a high-definition video processor, which—combined with a digital television receiver—puts the possibility of viewing HDTV content on the horizon.

The catch? You'll pay for all this graphic ecstasy: \$350 to upgrade from the GeForce2, \$450 to upgrade from ATI's Rage 128 Pro, and \$599 for a stand-alone card (sold by Apple) for G4s with 4X AGP slots. While there's been talk of third-party card manufacturers offering the GeForce3, no concrete information was available at press time.

If you've got the cash, this is one card you'll want to check out.—NR



Let GeForce be with you.

PHOTOGRAPH COURTESY OF NVIDIA

droolworthy



CMP4120HDTV Plasma Display

Hitachi www.hitachi.com \$9,995

Having plasma in your own home is worth \$10,000, but harnessing the power of that plasma to show *Space Ghost Coast to Coast* in full 42-inch glory is a bargain at twice the price.

The Hitachi CMP4120HDTV high-definition plasma monitor brings you this luxury. Weighing in at over 73 pounds, it's the perfect monitor for Mac owners with lots of cash to burn and an insatiable need to see their desktop patterns at really big sizes. The CMP4120HDTV has two analog RGB inputs, two composite video inputs, four audio inputs, and a place to plug in a special control box. It has speaker output ports so you can blast out your neighbors with *Dobie Gillis* reruns. Finally, the CMP4120HDTV is ready for HDTV—when that technology finally arrives.—DR

If you've got an extra \$10,000 kicking around, the most realistic image of Space Ghost can be yours.

VS-10 CineStation

Yamaha www.yamaha.com \$499

Imagine coming home from a hard day's work with your PowerBook G4 and a fresh copy of *Gladiator* on DVD. While connecting a G4 to your TV to play your DVD gives great video, your choices for audio output blow. Most televisions don't take advantage of DVD audio quality. As for your PowerBook's speakers—well, you're best off turning them off.



A receiver and speakers—
what else could you want?

Oh yeah, a DVD player.



Your best bet for audio quality is the new VS-10 CinemaStation from Yamaha. Plug in your PowerBook (or another home entertainment device such as the Sony PlayStation 2) and you'll experience audio like you never thought you'd hear at home. With Dolby Digital and DTS 5.1 decoders, as well as two optical digital inputs and three AV inputs, you'll be in the pit with Russell Crowe.—DR



Shareware Pick of the Month

Colibricks

PRICE: \$61 URL: <http://nav.to/colibricks>

There are those who say that breakout, the classic pound-the-wall-with-a-ball game, has been done to death. These people clearly haven't played Colibricks.

In Colibricks, you bat a ball at a series of bricks arranged in fans, smiley faces, and other creative patterns. These are no ordinary bricks. Some move, while others contain surprises (multiple balls, bonus points, lasers, and other goodies). Some of the goodies aren't so good—sometimes they halve your points. To find out what each brick does, you can activate balloon help and roll the cursor over bricks. To keep things interesting, Colibricks uses a decent physics model: When balls hit each other, they actually career around onscreen—good luck tracking them.

If you enjoy breakout-style games, you're going to love Colibricks. The demo has 6 levels, and registering unlocks 44 more.—DR



Break away from run-of-the-mill breakout games.

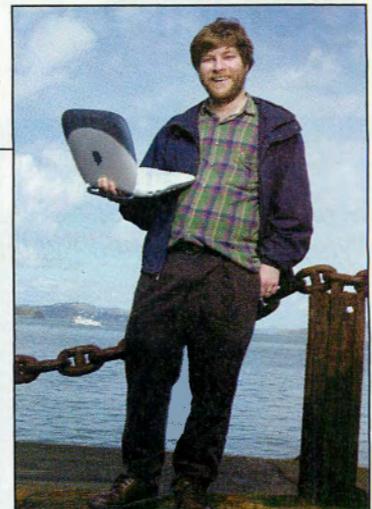


Maximum Range

Putting AirPort to the Ideal Test

Just how far can you go with an AirPort wireless network connection? Apple says a Mac with an AirPort card can maintain a 150-foot distance from its AirPort Base Station. D-Link, the company that makes the DWL-1000 AP Wireless Access Point, says you can achieve a 980-foot outdoor distance from the access point (the generic name for a Base Station). However, these estimates assume real-world conditions, such as crowded office environments.

But what happens in ideal conditions? With an unblocked, line-of-sight signal, how far away can you locate the access point from an iBook and still maintain a network connection? To find out, we hooked up a D-Link DWL-1000 AP Wireless Access Point to the roof of a car parked at Fort Point, just beneath one end of San Francisco's Golden Gate Bridge. We powered the access point with a voltage inverter (plugged into the car's cigarette lighter) to convert the car's 12V direct-current signal into 10V—enough to power most electronic devices. We then walked along the bridge with our iBook and occasionally held it above the railing to see if we could connect to the access point. Here are the results.—/S



Ian Sammis gives AirPort new meaning.



Connection Starts to Falter

At D-Link's nominal (listed) outdoor range of 980 feet, connectivity started to depend upon holding the iBook above the bridge's railing to avoid interference from the metal rail.



Pointing Becomes Crucial

At twice the nominal range, simply holding the iBook away from the metal railing was no longer enough to maintain a connection. We had to point the iBook's screen very carefully at the access point.

980 feet

1,800 feet

2,350 feet

③

Point of No Connection

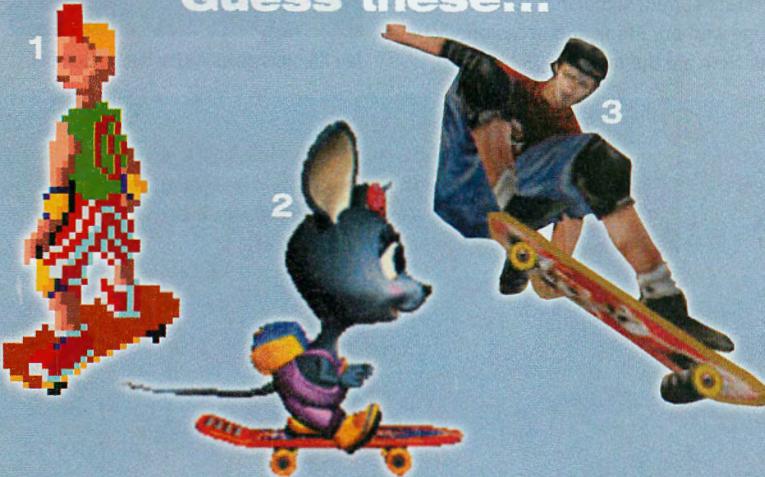
Beyond this distance, no amount of careful pointing was sufficient to establish a connection with the access point. Ah, well—we established a network connection at almost two and a half times the listed 980-foot distance. Not half bad—although we had hopes of playing Quake across the channel.

Xtreme Contest

Win an Autographed Skateboard from Tony Hawk

Ollie up. Whether you skate a rail, ramp, or joystick, you're probably stoked about *Tony Hawk Pro Skater 2* for the Mac. To celebrate the game's release, Aspyr Media—in collaboration with *MacAddict*—is giving away one original, autographed Tony Hawk skateboard and three copies of the game. All you have to do is guess the names of the games in which these skating fools appear.

Guess these...



...win these!



PHOTOGRAPH COURTESY OF ASPYR MEDIA



CONTEST RULES

- For each of the three characters, write down the game they're in and email your response to contest@macaddict.com with "skateboard contest" as the subject line.
- If you're submitting your entry via snail mail (no calls, please), send it to: *MacAddict*
Attn: skateboard contest
150 North Hill Dr.
Brisbane, CA 94005
- We'll randomly draw one name from the pool of correct responses to win the skateboard, and then draw three runner-up names to win copies of Aspyr's *Tony Hawk Pro Skater 2*. We must receive all entries by May 31, 2001, and we'll announce the winners in the September 2001 issue of *MacAddict*.—NR

Scripter's Corner

Folder Actions

One of the niftiest AppleScript tricks of recent times is the Folder Action, which can make the system jump through hoops in ways it was never designed to do.

A Folder Action is simply a script that triggers when you act upon a folder—for example, when you open or close a folder, modify its contents, or move the folder's window. These scripts do have one irritating restriction: Only changes visible in the Finder can trigger them. Adding files to a closed folder won't trigger a Folder Action, because nothing has visibly happened in the folder.

To write a Folder Action, you'll need to enclose a traditional script in an event handler. An event handler has the following form, in which *event* is the particular folder movement you're watching for:

```
on event
    AppleScript commands
end event
```

Some Folder Actions are extremely useful. For example, you can create a script to print a document automatically when you place it in a certain folder. Others, however, are naughty—like this one that instantly closes a folder the moment you open it. Here's the script for this classic practical joke:

```
on opening folder this_folder
    tell application "Finder"
        close the window of this_folder
    end tell
end opening folder
```

You'll find this script frustrating if you don't know about Folder Actions.

In the Joke script, the Finder marks *this_folder* as the folder to which you've attached the Folder Action. Don't forget to add *tell* lines (see above) to the script—without them, the AppleScript doesn't know where to send the Folder Action commands.

Here are some more. This Folder Action runs when the folder is closed:

```
on closing folder window for
this_folder
    AppleScript commands
end closing folder window for
This Folder Action lets you write scripts that react when
you move the folder window:
on moving folder window for
this_folder from original_bounds
    AppleScript commands
end moving folder window for
Take a look in the Scripts folder inside your System
Folder for other good examples of Folder Actions.—IS
```

Dr. Droo's MP3 Player Picks

Although iTunes is a relative latecomer to the digital audio party, it has given MP3s the Apple stamp of approval. As the popularity of this format continues to grow, you'll start to see more and more developers coming out with "the next best" MP3

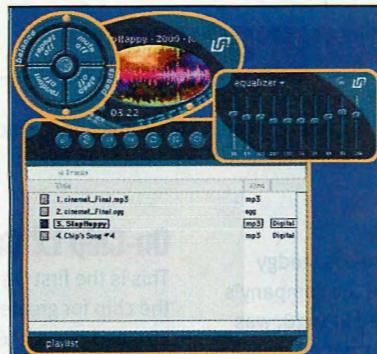
BEST LOOKING

Unsanity Echo 1.2.1

[Unsanity \(www.unsanity.com\)](http://www.unsanity.com)

\$19.79

Unsanity Echo might be a young program, but with great support and regular updates, this MP3 player has a lot of promise. Its most unique feature is its customizable, visual plug-ins. To reach audiovisual nirvana, check out Unsanity Echo for yourself.



Echo's interface is groovy, baby—and not a little unusual.

TRIED AND TRUE

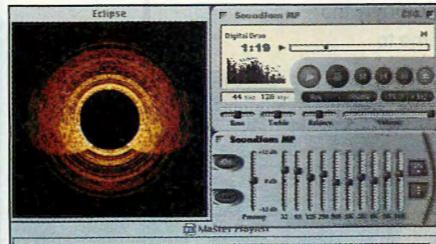
SoundJam MP

Plus 2.5.2

Casady & Greene
(www.soundjam.com)

\$39.95 download,
\$49.95 boxed

SoundJam MP Plus is arguably the most popular MP3 package for the Mac. With built-in encoding, an equalizer, skins, and third-party plug-in support, it has everything you need in an MP3 package, and a company name you can trust. But what you gain in brand assurance, you pay in dollars. SoundJam is the most expensive player of the lot.



An old favorite, SoundJam continues to inspire the latest crop of players; even iTunes has a similar look.

Real Advice from an Unreal Doctor

player and encoder in the months and years to come.

In the meantime, we've grappled with the torturous task of poking at a slew of MP3 players and finding our favorite in each of four categories.—AT

THINKS DIFFERENT

Audion 2.1

[Panic \(www.panic.com\)](http://www.panic.com)

\$19.95 player,

\$32.95 with encoder

Audion 2.1 is packed with unique features all MP3 players should have, like a waveform editor to cut, paste, and remix your MP3s; DJ crossfading; multiple control windows (to play up to five MP3 songs at the same time); per-song volume and EQ settings; and a popularity rating system for sorting songs by favorites.



Audion 2.1 might look minimalist, but it's pleasantly full featured.

BEST PRICE

iTunes 1.1

Apple
(www.apple.com)

Free

Featurewise, iTunes 1.1 is sparse, but you can't beat free MP3 encoding and a simple, slick interface.

With version 1.1,



Apple's iTunes 1.1 is free and easy to use.

the player now has the ability to burn to more than 25 CD-RW models, although it still lacks a graphic EQ. As a player and utility, iTunes covers all of your basic MP3 listening, encoding, and burning needs. In fact, it's the only player that has CD-burning capabilities, which should make it nearly ubiquitous.

TECHinfoTIDBITS

Random Notes from the TIL

The Apple DVD Dilemma

Here's a real catch-22. You've just downloaded the Mac OS 9.1 update. You launch the Apple DVD player, settle down to watch your DVD movie...and no go. What gives? Mac OS 9.1 requires Apple DVD Player 2.2 or later, but the downloadable 9.1 update won't let you upgrade your Apple DVD Player. To get around this problem, follow these steps:

1. Reboot your Mac from the System Install CD.
2. Do a clean install of any Mac OS between 8.6 and 9.04. This creates a new system folder and renames your Mac OS 9.1 System Folder to Previous System Folder.
3. Install Apple DVD Player 2.2, then move the Apple DVD Player folder from the Applications folder you just installed to your old Applications (Mac OS 9) folder. If a dialog box asks you to replace the folder, press OK.
4. Open the Extensions folder in your new System Folder and drag DVD AutoLauncher, DVD Decoder Library, DVD Navigation Manager,

DVD Region Manager, and DVD Runtime Lib into the Extensions folder inside the Previous System Folder.

5. Trash the following folders: Applications (the new one), Apple Extras, Assistants, Internet, Utilities, and Web Pages. Warning: Don't trash your old Applications (Mac OS 9) folder.

6. Rename Previous System Folder to System Folder. Open the System file (the one with the suitcase icon). Close all the open windows.

7. Restart your computer.

OK, now you can watch your movie.—NR

This public service announcement was brought to you by Apple's Tech Info Library at <http://til.info.apple.com>.



Find Audion 2.1, SoundJam MP Free 2.5.2, and Unsanity Echo 1.2.1 on The Disc.

scrapbook

This chip's on fire, even with no salsa.

The MPC7450 PowerPC Microprocessor

by Narasu Rebba Pragada

More commonly known as the new butt-kicking G4 chip, Motorola's MPC7450 is the fastest PowerPC chip to date.

The Tried-and-True Logo

Motorola hasn't significantly updated this logo in more than 30 years. While the stylized *M* monogram resembles the *Star Trek* insignia, Motorola conceived the logo in 1955, well before the television show's birth. After experimenting with square, round, and elliptical backgrounds, Motorola decided on the current circle design around the *M* in 1960.

Five years later the company solidified the logo in its current incarnation.

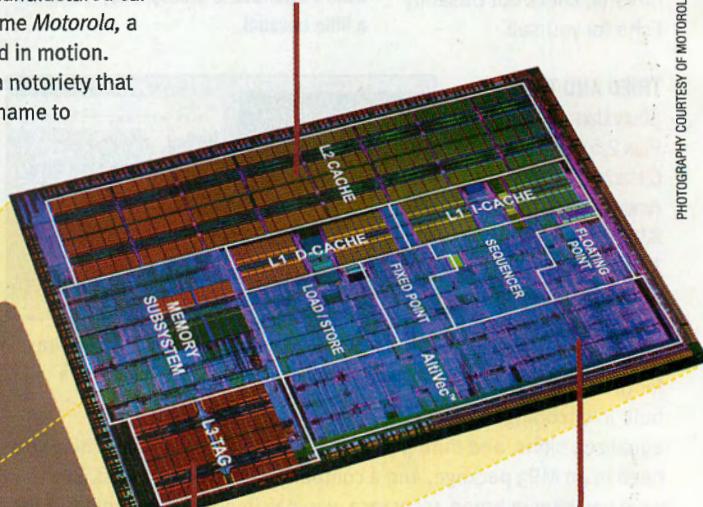
The Company Name

If you think the name *Motorola* is stodgy and corporate, consider that the company's original name, when founded in 1928, was the *Galvin Manufacturing Corporation*. In the 1930s, the company manufactured car radios under the brand name *Motorola*, a word that suggested sound in motion. The brand gained so much notoriety that the company changed its name to *Motorola* in 1947.

It has a deceptively simple appearance—but there's a lot more going on here than meets the eye.

On-Chip L2 Cache

This is the first G4 chip to integrate L2 cache on the chip for greater speed. This L2 is 256K in size and has a 256-bit interface to the L1 cache, which operates at processor frequency.



Backside Cache Tags

Sounds sexy, doesn't it? This new chip has three levels of cache. These on-chip L3 tags allow the MPC7450 chip to access as much as 2MB of off-chip (backside) L3 cache, which means a whole set of instructions can sit here, ready for processing.

The Model Number

This stands for Motorola PowerPC.

All Motorola G4 processors are numbered MPC7xx. The previous one was the MPC7400, and this new one is the MPC7450.

More AltiVec

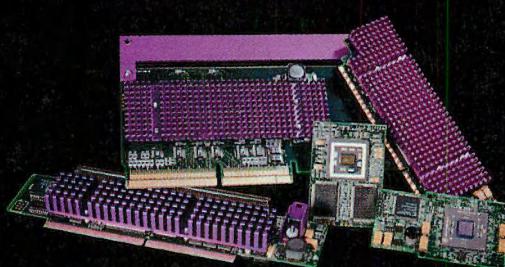
This chip has four AltiVec units (simple, complex, floating, and permute), which can perform four 128-bit vector operations simultaneously. The original G4 processor had only one unit. This setup—a kind of four-wheel drive for Mac—makes graphic apps fly, because the processor can work on multiple pixel calculations simultaneously.

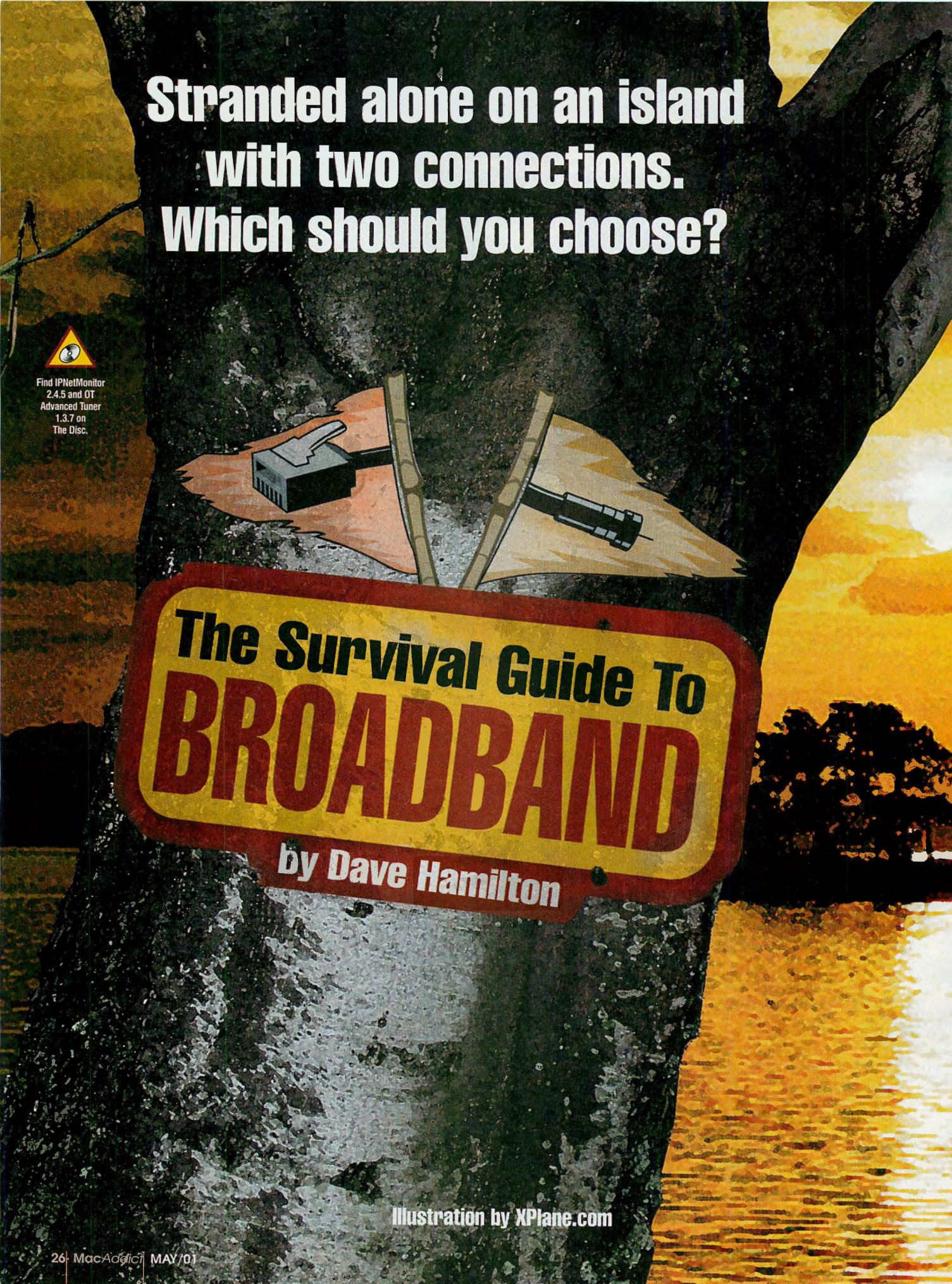


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Stranded alone on an island
with two connections.
Which should you choose?



Find IPNetMonitor
2.4.5 and OT
Advanced Tuner
1.3.7 on
The Disc.

The Survival Guide To **BROADBAND**

by Dave Hamilton

Illustration by XPlane.com

Let's face it: Once you've experienced the world of broadband, 56 Kbps just doesn't cut it anymore. The thought of not having to listen to that ringing phone and the incessant squealing familiar to all who have ever dialed up via a modem should be enough to convert you. But if it's not, surely the ability to download apps in minutes instead of hours, the option of playing multiplayer games, and the capability of watching movie trailers online should convince you that broadband is as much a necessity as shelter, human companionship, and your Mac. So say goodbye to the days of watching Web page graphics load one painful JPEG after another—your life is about to take a turn for the better.

Thankfully, broadband Internet access is available to most people in big cities and densely populated suburban areas. These areas will likely have providers who offer multiple options—the two most popular being DSL (digital subscriber line) and cable—but even those of you in less-populated areas should have at least some sort of broadband available to you. The big question—especially for those with a variety of options—is how to decide which type of service you want. Each type of access—heck, each service provider—has its pluses and minuses. Depending on where you are, what you need to do, and how fast you need to do it, you may have to choose between different types of access and varying ISPs.

But that's why we're here—and why we created the Broadband Survivor Challenge. No, we didn't escape to the Australian outback and attempt to win a million dollars by eating larvae and bathing in crocodile-ridden rivers (just forget about getting on the Internet from there!). Instead, we came up with seven tribal challenges (including speed, price, and reliability) and mercilessly threw them at DSL and cable (the two mainstream options for residential broadband) to determine which option could stand up to the torture. To do this, we locked ourselves away for one week with nothing except DSL, a cable modem connection, and some packages of beef jerky, and tested our connections until our fingers became calloused. After running our tests, we took the results to a tribal meeting. In the end, we kept the winner, booted the loser, and decided which service would get the big prize: our business dollars.

Though we came up with a winner, it's important to keep in mind that how much you get from your particular connection may vary depending on your circumstances and the service providers in your area. But we'll help you make whichever broadband connection you choose work for you. In this article, we describe how broadband will benefit you, help you decide which service best fits your needs, show you how to choose a service provider, talk about alternative broadband technologies, illustrate how to network multiple Macs on your connection, and give you advice on making your connection faster, more powerful, and more secure. We swear that in the end you'll know how to survive the world of broadband no matter which way you log on.

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5 Reasons You'll Love Broadband

You may not think you have a need for speed—but you do. If you spend any amount of time on the Internet, you're in a position to really take advantage of a high-speed connection, whether it's in the form of DSL, cable, or some alternative (see "Broadband Alternatives," below). "How?" you ask. Well, if you're a 56-Kbps user, think about how much time you waste waiting for your machine to dial and connect. If you check email, you likely spend more time waiting for the modem to squeal than you spend reading your messages. With broadband, your connection is always on. That means

1 Email: Most of you probably spend a lot of time reading email online. A broadband connection won't help you read any faster, but it will retrieve your mail more quickly. In our tests using both DSL and cable, we downloaded ten messages almost twice as fast over a broadband connection as over a 56-Kbps modem—that's not light speed, but it is a respectable increase.

2 Web Surfing: Here you'll notice a bigger speed difference. Web pages definitely load faster, and even a page of mostly text, such as MacObserver.com, comes up much faster on a broadband connection than it does over a 56-Kbps modem. The more graphics the page has, the more you'll notice the speed difference (for example, Apple's QuickTime page, www.apple.com/quicktime, loads *much* faster). Sites like Sony.com and AtomFilms.com—pages all but unbearable to load at modem speeds—just pop onto your screen with almost no delay. Never again will you fear sites that make liberal use of Flash and QuickTime. Visiting CandyStand.com (a cool little Shockwave site) has never been more fun!

Broadband Alternatives

DSL or cable? Cable or DSL? While these two technologies are fighting it out for dominance in the broadband arena, a few alternatives are trickling in. These alternative technologies are not widely available, and where they are, mostly businesses use them. However, they do offer a look at what may lie ahead for broadband in the home—if they survive (right now, these expensive technologies need to come down in price to catch on). We talked to Ben Macklin, broadband and entertainment analyst for eMarketer, an Internet-analysis firm in New York, to get the skinny on these broadband alternatives.—CL

Fixed Wireless

What is it? Transmission of data takes place via microwaves between fixed antennas. You must live near a base station for access.

How fast is it? 300 Kbps to 1 Mbps downstream (from the Internet to you), 60 to 500 Kbps upstream (from your computer to the rest of the world).

Cost: \$50 to \$200 per month; \$1,000 to \$1,500 to install.

Survival Advantages: Service providers don't have to lay large amounts of lines and cables—this might eventually translate to lower costs for consumers.

Survival Disadvantages: Your bandwidth depends on how far you live from the base station. Line-of-sight problems can occur—for instance, bad weather, big buildings, or large trees can interfere with transmission. Also, it's not widely available.

checking email, looking at your stock portfolio, or finding out what movies are playing at the local theater—along with watching their trailers—are all just a click away.

All this, and we haven't even *begun* to talk about how fast broadband really is. Though that depends on the type of connection you have, the servers to which you connect, and what you're doing with your connection, believe us when we say that you *will* notice an immediate difference regardless. Here are five ways broadband will benefit you:



With broadband,
reading and receiving
email becomes even
more enjoyable, if you
can believe it.



Let off a little steam by playing a game of golf at CandyStand.com.

Satellite

What is it? You use a digital satellite dish to catch a signal from a satellite.

How fast? 300 to 900 Kbps downstream; 50 to 150 Kbps upstream.

Cost: \$60 to \$70 per month; \$300 to \$500 to install.

Survival Advantages: Provides access to rural areas.

Survival Disadvantages: Downstream bandwidth is shared and upstream bandwidth is pathetic to nonexistent because you often have to use a telephone line for upstream transfers. Slow speeds. Latency can occur—satellites are 44,000 miles away. Weather can cause interference. ISPs may not be Mac-compatible.



Fiber Optic

What is it? The King Kamehameha of broadband. Fiber optic broadband access is a Napster lover's dream because it offers unbelievable speeds. The current telecommunications network is composed of fiber optic cables, but those lines stop at local exchanges. From there, copper takes over to deliver broadband to your house. However, service providers can extend fiber optic cabling currently to businesses, and they may be able to extend it to residences as well.

How fast? 100 Mbps to 50 Gbps (yes, that's *gigabits*).

Cost: You really want to know? In the thousands.

Survival Advantages: Speed, speed, speed.

Survival Disadvantages: Cost, cost, cost.

3

Online Gaming: Even though most games are optimized for modem play, a broadband connection will certainly ensure a better gaming experience. Ping times—that is, the time it takes for your computer to receive a response from the game server—will drastically decrease. This shorter response time means games will run smoother, and you'll likely see your shooting accuracy improve as a result.

Ping times in Unreal Tournament rock on a high-speed connection.

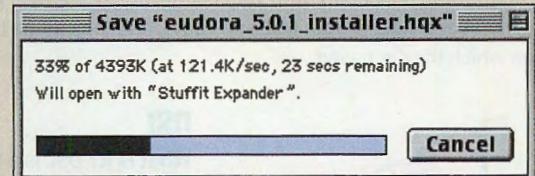
| Server | Ping | Map N. |
|--|------|----------|
| [CSHP] Armageddon - 1v1 Server 2- Free to use when empty | 49 | Codex |
| [CSHP] Clan-{Hash} Server (Hosted by Sabredomain.com) | 49 | Infectic |
| [CSHP] DvT TeamDM courtesy of GBIS (www.dvts.org/ghh) | 53 | Curse] |
| Amstar Aerodyne | 65 | Gothic |
| [CSHP] House of [H]avoc | 82 | Novem |
| [S2] Clan Server [CSHP] | 84 | AVAIL |
| Sabre's Domain CTF | 93 | Core |
| UT Server | 95 | Escape |
| [CSHP] GhtBear's Public TDM Server | 106 | Floating |
| Technoman's Private Server | 111 | Liandri |
| zpl RoodyPoo's 24/7 UT! = DEATHMATCH = | 119 | Morph |
| [CSHP] SNIPERS SNIPERS SNIPERS | 126 | Cinder |
| Zeus's Private [CSHP4-b] | 127 | Phobia |
| p*U*!*2* *New* Easy Kills R No Thrills! Files @ Http://Home.Fu.132 | | DM-Kit |

4

Downloading Files: This is where you begin to see your broadband connection's true speed. When you want to download the latest version of your favorite Web browser, you'll no longer cringe at its 15MB size. That's because instead of maximum speeds of 5 Kbps on your modem, you'll see speeds of 50 to 400 Kbps, depending on the speed of your connection and the server from which you're downloading. At 400 Kbps, a 15MB file will take approximately 45 seconds to download—on your 5-Kbps modem connection, you're looking at about 45 minutes for the same file. With this newfound speed, you can keep your computer updated with the latest versions of all your favorite software. Plus, since the connection is always on, you can set up your Mac to upgrade software such as virus definition files at night while you're asleep.

5

Streaming Media: This is where broadband really shines. With a modem connection, QuickTime and RealPlayer streaming isn't a viable option most of the time, as you wind up sacrificing too much audio and video quality to make viewing worthwhile. You can make it work, but if you're watching, say, the music video of Britney Spears's "Baby One More Time," you'll end up seeing a series of stops, starts, and stutters (as if the song wasn't painful enough on its own). With cable or DSL, however, video will start playing almost immediately, and unless the server is having trouble, you're not likely to see any pauses in the stream.



Zoom, zoom, zoom. Imagine downloading a more than 4MB file in just over 30 seconds.

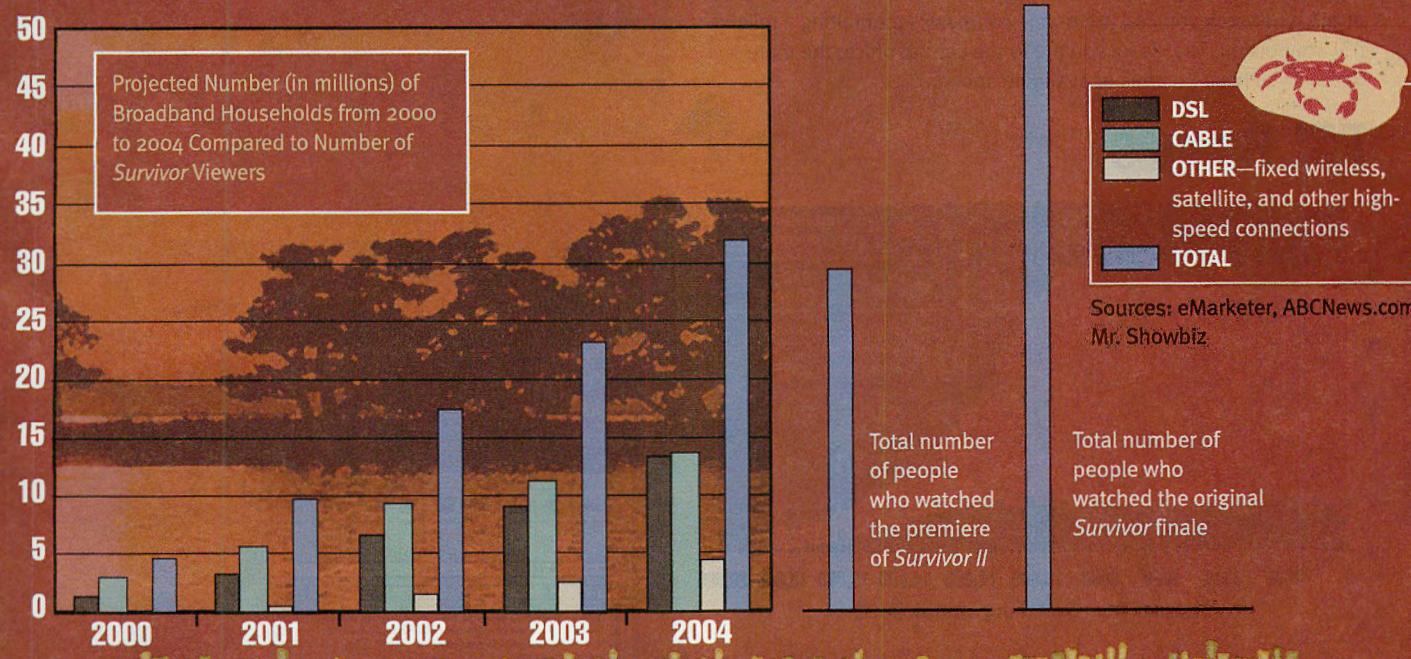


Forget previews! With a broadband connection, you can watch movie trailers at high quality and in full screen.

The Broadband Epidemic

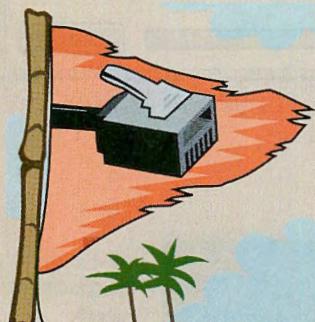
Currently, the percentage of people adopting broadband for home Internet access is relatively small. But by 2005, that number will have risen sharply, making broadband almost as popular as the show *Survivor*.

As you can see in the chart, below, 2004 is the year in which the number of U.S. households that use broadband will finally overtake the number of people who watched the premiere episode of *Survivor II*. So what does that say about us as a culture? We shudder to think.—CL



The DSL and Cable Conundrum

DSL or cable: For those of you who have a choice, the decision can sometimes be as hard as settling on a chocolate or vanilla shake. Rest assured—both DSL and cable are fairly reliable technologies. However, each has its advantages and disadvantages, and choosing which one suits you best depends a lot on what you'll be doing with your connection. Here we'll give you a general overview of both DSL and cable, and look at the technologies on which they're based.



DSL

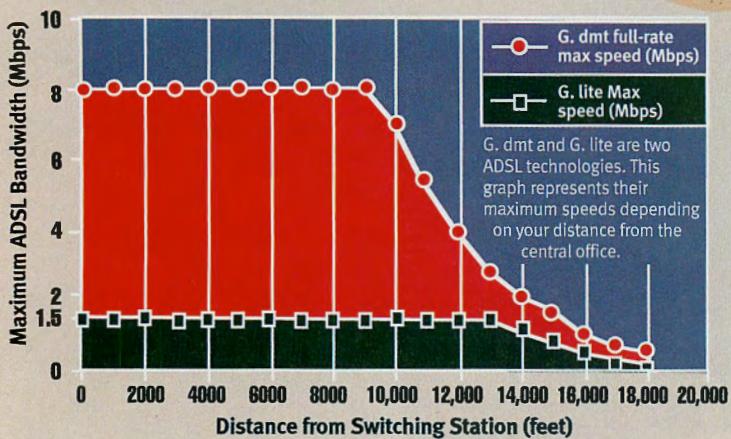
What is it? DSL is a technology that works over existing phone lines. Your voice signals use only a small fraction of the bandwidth available on most standard telephone lines; DSL takes advantage of that by using the rest of the available bandwidth for your Internet connection. Once DSL is set up, it is

completely transparent—you can talk on the phone and use the Internet at the same time with no degradation of either connection.

How fast is it? DSL is a dedicated circuit between you and your ISP. This connection is at a fixed, guaranteed speed (this is only the speed between you and your provider, not necessarily the speed between your provider and any given server to which you want to connect). DSL is typically sold in multiple speed increments, with the cost going up as the transfer rates get faster. Based on our research, most home DSL connections are between 384 and 1,500 Kbps downloading and 128 to 256 Kbps uploading.

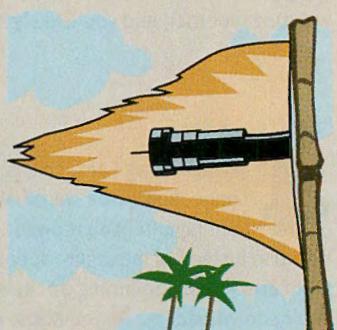
Caveats: The one big problem with DSL is that the phone company can only provide reliable service if your home is within 17,500 feet (approximately 3.3 miles) of its central office. This is measured by phone cable length, not necessarily as the crow flies, so it's possible to be closer than 3.3 miles away and still have more than 17,500 feet of cable between you and the phone company—prohibiting a reliable DSL connection. The closer you are to the central office, the more options you have in terms of available speed.

DSL Ranges



Cable

What is it? A cable modem shares your cable line with your television signals, using some of the remaining available bandwidth to send Internet signals. Your house must be wired for cable, but you don't necessarily have to have cable going to your television.



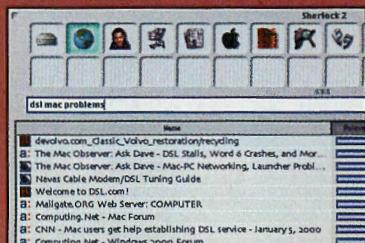
How fast is it? The circuit to which you connect is not dedicated as with DSL—rather, it provides for a specific area, such as your whole neighborhood, and may or may not have fixed speeds. Based on what we've seen, typical cable speeds range anywhere from 256 to 5,000 Kbps downloading and 56 to 1,500 Kbps uploading.

Caveats: Because cable is shared, you might run into problems in a neighborhood where a lot of people have cable access. If your neighbor is downloading movies (or, um, other types of files) all day long, your connection may be slower than the speed your ISP promised. However, cable usually allows faster downloads than DSL, since most people in your neighborhood won't be downloading at the same time.

Also, while some cable companies sell bandwidth in different speed tiers, keep in mind that these aren't usually guaranteed speeds; rather, they are the maximum speeds (or caps) for your connection. The cable ISPs do this to protect you against problematic customers who may want to spend their life on Napster sucking down the entire Metallica audio library. This allows the cable company to plan and ration out bandwidth, ensuring you'll have a steady connection most of the time. However, since it's unlikely everyone in your neighborhood will be using the Internet simultaneously, a lot of bandwidth goes unused while you confront a speed cap of, say, 512 Kbps.

Pesky Mac Problems

While most service providers are supporting the Mac without question these days, there are still a few that haven't seen the light. However, that doesn't mean they *can't* support the Mac, but rather, they *won't*. Since the Internet is based upon platform-independent protocols, anything ISPs can do on Windows they can also do on the Mac. With the availability of PPP over Ethernet software for the Mac, every provider out there has the tools it needs to make broadband work on a Mac. So if a service provider tells you it "can't be done," the person you're talking to is either uninformed or just plain lazy. Do some research on the Web (try plugging *DSL Mac Problems* or *Cable Mac Problems* into Sherlock) and ask around—chances are you'll find what you're looking for. If Sherlock doesn't turn up anything, MacFixIt (www.macfixit.com) typically stays on top of these types of issues and can be a valuable resource in your quest for Mac-friendly broadband access.



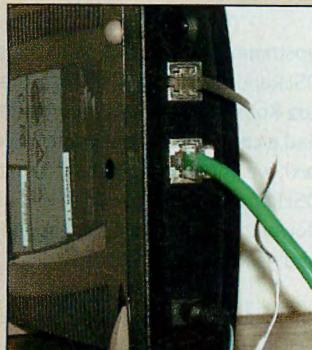
Setting Up Your Broadband Connection

Whether you choose cable or DSL, your computer will have to interface properly with your connection via a special router (or modem). In most cases, your service providers will offer to

send a technician to your home who will set up the modem for you when he or she installs the connection. But as a true survivor, you'll undoubtedly still want to know how to set up the connection yourself. Here's how to do it:

DSL

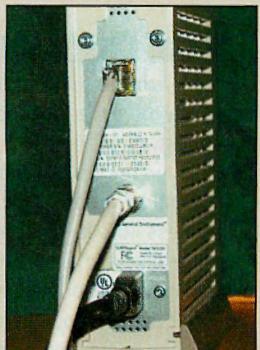
A DSL router is fairly straightforward. You'll typically see connectors for AC power, Ethernet (which goes to your computer), and DSL (which goes to your phone jack). Often the extra signal noise from DSL transmissions causes noticeable interference on regular phones connected to the same line. In this case your phone company should provide Z-blockers, little filters you put between your phones and the jacks to strain out DSL noise. Just don't put a Z-blocker on the DSL router's jack, or you won't be able to connect to the Net!



A DSL router has room for three connections: a phone jack, a power connector, and a standard RJ-45 Ethernet port (which typically runs 10Base-T).

Cable

Your cable router will have connectors for AC power, Ethernet (for connecting to your Mac), and a coaxial cable connector like the one on your TV. While the cable modem will likely work with all of the cable jacks in your house, the technician almost always designates a main jack for your cable modem access. This jack is typically free of any line splitters and connects directly to the junction box at your house. Oftentimes the cable company will wire this jack with a direct line to the street to give you the best bandwidth possible. Just because the cable modem works on all of the jacks in your house doesn't mean you'll get equal speeds from each jack.



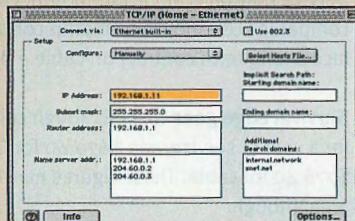
Look familiar? A cable modem resembles a DSL router, except that you need to plug in a coaxial cable instead of a phone jack.

Configuring Your Connection

Once you've got a physical connection, you need to configure your Mac to access the network. There are three ways to do this, although in most cases your provider will decide upon the method.

Static IP Address

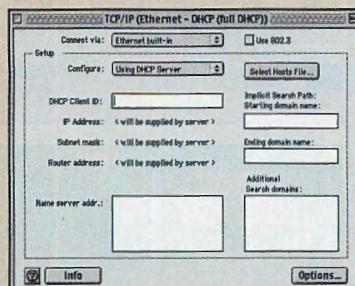
While it's on the Internet, your Mac needs a unique Internet Protocol (IP) address. Some providers assign these manually and give you an address to type into your TCP/IP control panel.



By plugging all of the appropriate data into the TCP/IP control panel, you give your Mac its identity on the Internet.

DHCP

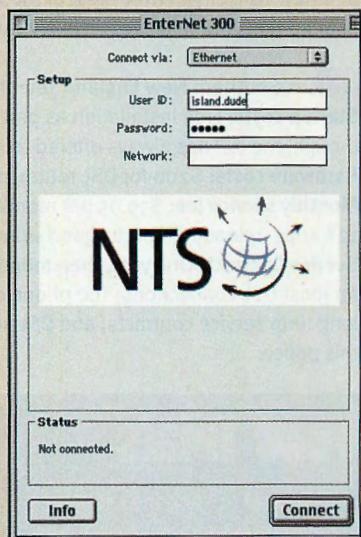
Some providers give you a dynamic address each time you turn on your computer, making it cheaper and easier for them to set up your connection. They do this via DHCP (Dynamic Host Control Protocol), which allows them to autoconfigure all your Internet-related network settings. Just set your TCP/IP control panel to configure your Mac using DHCP, and you're good to go.



Most cable providers (and even some DSL ones) make use of the industry-standard DHCP protocol.

PPP over Ethernet

Some providers require a little information from you each time you connect to the Internet because they want to make sure that you are who they think you are and that you're using just one computer at a time. PPP, the favored protocol for authenticating users on dial-up connections, has been adapted for use over Ethernet-based broadband connections. This requires that you install a piece of software (typically EnterNet) provided by your ISP. Every time you connect, just enter your user name and password, then click Connect.



Most DSL providers make you log in with a user name and password before you hit the Net.



DSL vs. Cable: 7 Tribal Challenges

Now it's time to get down-and-dirty—that means it's time for the Broadband Survivor Challenge. We came up with seven tribal challenges based on what we feel are the most important factors in deciding which connection best suits your needs. We pitted DSL against cable and chose a winner for each challenge,

based on our experience when we spent a week locked away in our office with both connections. We then considered the overall results to pick a winner and decide which technology we would ruthlessly throw out of the house. Just remember: Your experience may vary greatly depending on where you live.

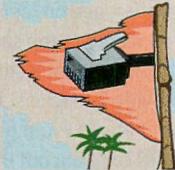
Tribal Challenge 1: Speed

Speed is by far the best reason to get a broadband connection, and it is likely to be the most noticeable change. So we took our speed tests seriously (see "Time Trials," below).

To run our tests, we used DSLReports.com, which tests the connection in both directions. The site has your browser load a harmless little Java applet that measures the time it takes to send and receive a large packet of data. It then reports the results and offers to show you results from other people in your geographic area so you can see how the connection fared overall. We were lucky—we got close to maximum speeds on both of our connections. The phone company rated our DSL at 1,500 Kbps downstream and 128 Kbps

upstream. Our connection to the speed test center at DSLReports.com showed us averaging 1,204 Kbps downstream and 102 Kbps upstream. As we mentioned before, our cable connection had a cap on it. For the same price as DSL (\$39.95 per month, plus tax), we got only 512 Kbps downstream and 64 Kbps upstream. Again, DSLReports.com showed speeds fairly close to maximum, averaging downstream and upstream speeds of 494 Kbps and 57 Kbps, respectively.

Survival edge goes to: DSL. Given that our DSL provider promised better speeds, the results were no surprise. Still, DSL has the edge here.



Tribal Challenge 2: Price and Contract Term

Let's face it—money is an object, and you need to make sure you are getting good value for your dollar. Also, you probably would rather not get locked into a long-term contract if you can avoid it. Below are the prices and options we received from our local service providers in New Fairfield, Connecticut (about halfway between Hartford, Connecticut, and New York City). While most of these statistics are fairly typical, keep in mind that your mileage will likely vary.

DSL—Southern New England Telephone

Startup costs: Free installation as part of a "special deal" (apparently, though, the ISP has always offered this deal in one form or another).

Hardware costs: \$200 for DSL router, no rental option available.

Monthly service fee: \$39.95 per month for 1,500 Kbps downloading and 128 Kbps uploading—pretty good value based on our research.

Service Contract: One year, then month to month thereafter—common for most DSL connections. The phone company tends to lock people into long-term service contracts, and DSL service is rarely an exception to this policy.

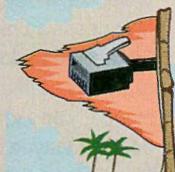
Cable—Charter Communications.

Startup Costs: \$99 for installation. Some cable companies will offer a package deal in which you can get cable and cable modem service installed at a discount. However, we found that cable companies offer this type of promotional deal much less frequently than DSL providers do.

Hardware costs: \$200 for cable modem or \$15 per month rental.

Monthly service fee: \$29.95 per month for 256 Kbps downloading and 64 Kbps uploading, \$39.95 per month for 512 Kbps downloading and 64 Kbps uploading. (Note that these figures are atypical—most cable modem service will range about 2,048 Kbps down and 384 Kbps up.)

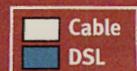
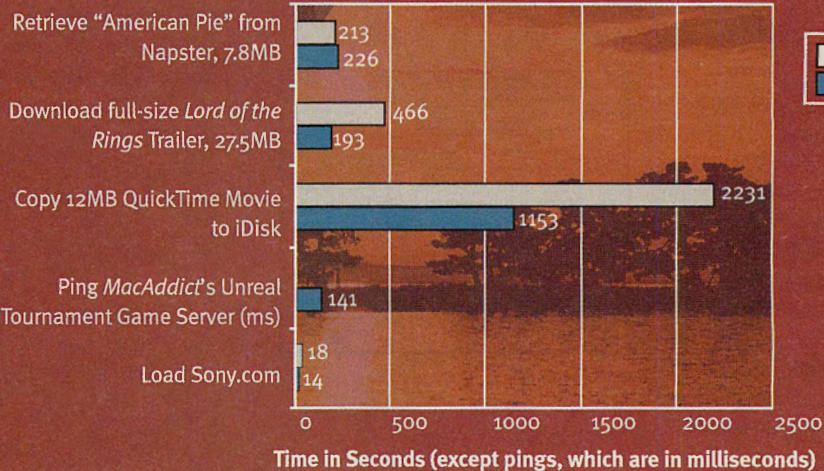
Service Contract: Month-to-month, cancel at any time—since most cable companies use month-to-month contracts, you usually do not have to face a long-term contract on cable modem access.



Survival edge goes to: DSL. Tough call, but our costs for a year of service was \$679.40 for DSL and \$778.40 for cable. These figures may differ in your area, though.

Time Trials

Instead of trusting the cable or telephone company's claims as to the speed of our connections, we decided to perform some tests of our own, all during peak times (between 7 and 10 p.m.). One note—our cable modem provider prevented us from pinging other computers (this is atypical of cable modem service), which made online gaming very tough, to say the least. Let the tests begin!

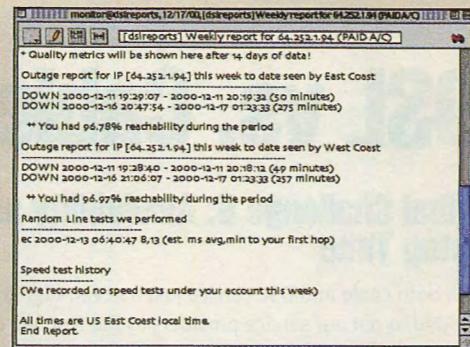
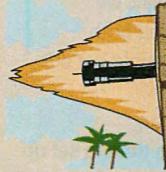


Tribal Challenge 3: Reliability

Another important factor to consider is how reliable your connection is—after all, why get broadband if your connection knocks off on a regular basis? To test reliability, we once again turned to our friends at DSLReports.com for weekly reports detailing the consistency of our connections according to their servers.

The cable modem service didn't drop out once during the entire time we used it, and we never had a problem connecting to any servers. DSL, on the other hand, dropped out about once or twice per week. The outages were short, lasting a half hour at most, but they can nevertheless be frustrating when you're trying to work (or play!).

Survival edge goes to: Cable. With its perfect track record, cable wins this one hands-down.

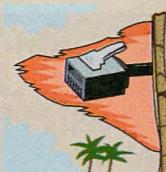


DSLReports.com provides a way of monitoring your connection at regular intervals and sends weekly email reports to snitch the results.

Tribal Challenge 4: Technology

We may be nerds, yes, but we're not afraid to admit it and ask the hard questions, such as "How does this technology work behind the scenes?" Since the actual technology behind DSL and cable can affect how well your connection works, we decided to include technology as one of our challenges.

As we mentioned before, the DSL line is a dedicated circuit between you and your Internet provider at a guaranteed speed. A cable modem connection, on the other hand, is a shared circuit. This means your neighbors' use (or overuse) of the connection can slow things down for you—so much so that online gaming becomes all but impossible at times, and Web sites occasionally connect at a crawl.



Survival edge goes to: DSL. Although we didn't experience too many problems, cable still runs the risk of being slow at times because of the technology.



Online games like Pod Racer can turn into a real bear when you're sharing a cable connection with all of your bored or laid-off neighbors.

Tribal Challenge 5: Security

Although an always-on connection can seem like a gift from god, being connected all the time means unscrupulous (or curious!) hackers can try their luck at getting into your important files.

That said, DSL is still pretty secure. It connects directly to the Internet, which leaves some holes open, but the DSL technology itself doesn't open you up to the attack of anyone "extra." Contrary to popular belief, though, cable is just as secure as DSL. Despite the fact that you share the line with neighbors, no added risk is involved because the cable modem ensures that the only signal you receive is

the one meant for your modem. Filters built right into cable technology keep extraneous (that is, neighborly) data packets from creeping into your home—and turning off File Sharing (see "Are You Insecure?", p36) makes your cable line just as safe as DSL (although you should still perform this safety measure if you have DSL). Now, if someone directly wanted to attack you, they certainly could, but you would be no more or less vulnerable than with any other type of connection.

Survival edge goes to: Neither! Or both! Your Mac is equally secure (or insecure) whether you have a DSL or cable connection.

How to Tweak Your Connection for Speeeeeed

So 1,000 Kbps isn't good enough for you? Feel the need for *more* speed? Well, you may be able to eke a few more Kbps from your connection by tweaking Open Transport (Apple's name for Mac OS networking components). You may hear your Windows friends (if you can call them that!) discuss things like RWIN parameters or MTUs. TCP/IP (the protocol spoken by all computers on the Internet) uses these parameters to fine-tune the connection regardless of platform.

RWIN (Receive Window) is the buffer the computer uses when receiving data from hosts on the Internet. The computer waits for this buffer to fill up, then passes the data along to the application you're using (like Internet Explorer). If this window is too small, the connection will never get up to speed before the computer closes and resets the buffer. If the window is too big, the connection may appear to slow down while the computer waits to see whether more data will come into the buffer before passing on the data. MTU (Maximum Transmission Unit) is similar to RWIN in that it sets the maximum size

for packets the computer will attempt to send over the network. If some piece of data exceeds this amount, the computer must split it into segments before sending it. Since each packet must include extra information (such as its intended destination), it's best to use the largest packet available to avoid sending all of that extra information each time. On some computers and connections you can get a 10 to 15 percent speed improvement by setting your RWIN, MTU, and other Open Transport parameters outside their normal ranges.

To tweak Open Transport, try IPNetTuner from Sustainable Softworks (\$25, www.sustworks.com), which comes with preprogrammed scripts to set all your RWINs and buffers. You can also adjust these settings manually via a menu-driven interface. We didn't notice any speed difference after making these adjustments, but try it for yourself since each service provider configures its networks differently.



DSL vs. Cable continued

Tribal Challenge 6: Availability and Setup Time

With both cable and DSL service just a seven-digit dial away, we decided to put our service providers to the test. We ordered both services on the same day to see how fast each company could get our connections up and running.

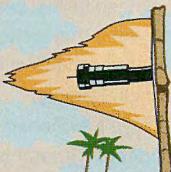
The cable company, Charter Communications, set up an appointment for three days after we called and arrived on time to set up and test the modem, and configure our Mac. Everything worked as promised after the technician left, and the company explained everything in simple, easy-to-understand terms.

The people at the telephone company, Southern New England Telephone, informed us that the FCC (Federal Communications Commission) gives them three weeks from the order date to get the DSL line working. They told us they had to come out and verify that DSL was available on the line (something they could do outside the house)

before they could provision and configure the actual line. They would not guarantee a day, only that we would have DSL within the three-week time frame. Exactly 20 days later we were up and running, and our line actually worked on the first day—a surprise to other customers we talked to. Many DSL users find that their installations don't work on the first try, and it often takes an additional two or three weeks to get them functioning properly.

Also, it's important to look at the accessibility of each technology. Since DSL is only reliably available to people living within 17,500 feet of a phone company's central office, cable is much more widely available in general and is the only option for many people, especially those living far outside city limits (see "O Broadband, Where Art Thou?", below).

Survival edge goes to: Cable. With greater availability and only three days between the initial phone call and the acquisition of blazing Internet speed, cable gets the nod.

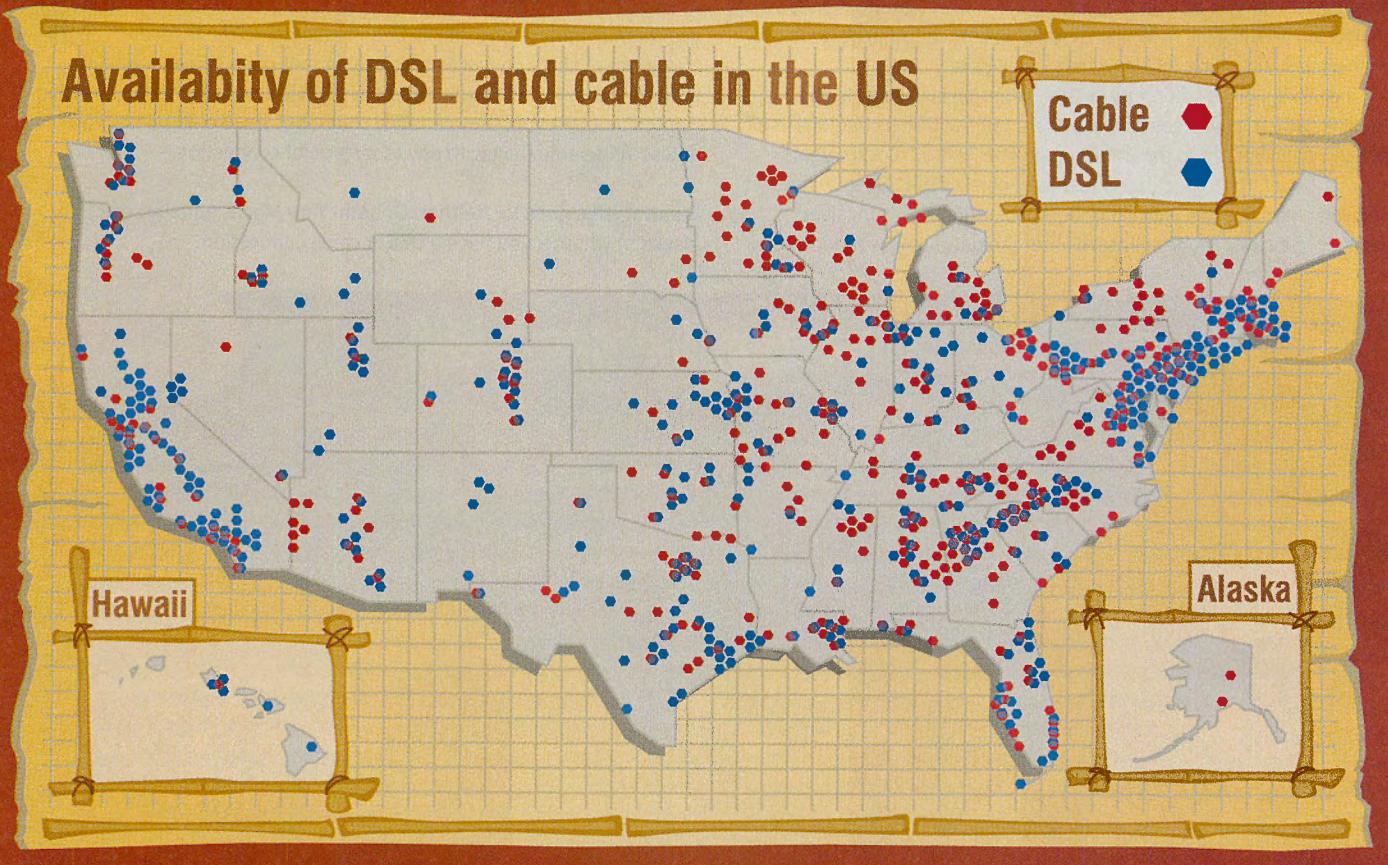


O Broadband, Where Art Thou?

Of course, the ultimate question of whether you go with DSL or cable often comes down to which one is available in your area. If you live in a big city or a well-populated area, you may think broadband is available everywhere in the United States—but that's

not the case. The following map indicates where you can access cable modem service and DSL, according to an August 2000 report from the FCC. For those of you who live in rural Montana—well, there's always satellite, right? We hope so, anyway.—CL

Availability of DSL and cable in the US



Tribal Challenge 7: Options

Everybody likes having options, and you're no exception. You like the flexibility to abuse your connection exactly as you please, and you don't want anyone telling you it's not possible for you to do something your best buddy can do with his or her connection.

That said, our DSL connection was ours to play with as we wished. Our ISP had no problem with our running a small Web server, and no one told us we couldn't ping or do any of those other geeky things we love to do. The service provider filtered nothing, and everything worked well with even the most basic of packages. Our cable company, on the other hand, filtered everything under the sun, preventing us from running a Web server and pinging other

computers. Worse than that—it told us if we tried to find a way around the blockages, it would suspend our connection! Unfortunately, the company enacted this policy with good cause. Because users share cable bandwidth, many cable providers limit user options to ensure the best possible experience for the majority. Still, we don't have to be happy about it, especially when we have other choices!

Survival edge goes to: DSL. Imposing almost no limits on what we did with our connection (other than legal limits, of course!), DSL was the clear winner here.

Judgment Day

For us, the choice was clear: Send the cable modem packing and build a nice, permanent shelf for a DSL router. When we called the cable company reps to have them disconnect the line, they asked us why. When we explained that we had better options through DSL, they offered us a SoHo package on which we could run our Web server, ping other computers for game playing, and do everything our hearts desired. The moment of triumph was short lived, though, because the company quoted us a whopping price of \$99 per month, plus taxes and rental fees—more than twice the cost of our DSL line!

The Winner: DSL! It was cheaper and faster than cable and offered more flexible options.



The Broadband Survivor Challenge was brought to you by the Charter Pipeline cable modem service and SNET/SouthWestern Bell's DSL offering in Connecticut.



Checklist Charlie: 8 Questions to Ask Your ISP

While we had a better experience with DSL, many cable modem providers offer faster connections than the one with which we were saddled. Your costs, speeds, and experience can vary greatly depending on the provider. Of course, for many of you, the decision to go DSL or cable is out of your hands—you may only

have access to one type of service. For those of you who have options, you probably won't actually want to test both types of connections. Luckily, you should find you can make a decision after doing a bit of initial investigation and asking your potential ISP these eight questions.

1) Do you offer high-speed Internet access?

2) How fast is it?

Both cable and DSL connections are asynchronous, meaning data can travel at different speeds in each direction. This means you can pay for the speed where you want it (from the Internet to you), and save money by getting a slower speed in the direction you probably use least often (from you to the Internet). Ask for both upstream and downstream speeds.

3) How much does it cost?

Most DSL providers, and even some cable companies, offer service in varying speed increments, so ask for a breakdown. They may tell you the service is "as fast as 6 Mbps" when in reality those kinds of speeds would cost you upward of \$200 per month.

4) Are there any signup fees?

5) Do I have to sign a long-term service contract?

6) How long will it take to get service? Is that guaranteed?

Many companies will say you can have service in a certain number of days, but won't guarantee that time until they come out to your site and verify that the connection works.

7) Does it work with the Mac?

This is to ensure your potential ISP is Mac-friendly.

8) Is there anything this service does not allow me to do?

Get a technician on the phone line and ask questions like the following: Can I run a small Web server if I want? Can I play online games? Will your system let me ping other users? Is there anything your service won't let me do?

Are You Insecure?

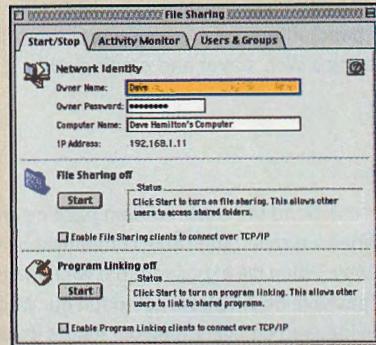
Connecting to the Internet via a broadband connection holds a different type of security risk than connecting via a modem. However, this is one of those times when you can be happy that the Mac is *not* the dominant platform. Most of the

widely used hacks out there are geared to break into services available only on Windows or Unix-based computers. It is very rare for hackers to target a Mac-specific resource in their exploits. Even so, you'll want to learn how to survive in this insecure world.

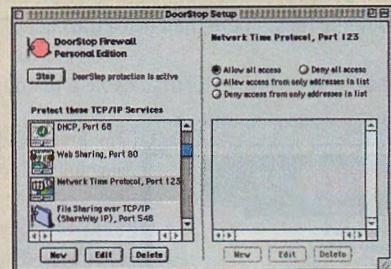
Mac OS 9 Security

One File Sharing feature introduced with Mac OS 9 is the ability to share your files via TCP/IP. Because TCP/IP is the same protocol that's used on the Internet, you can share files with anyone in the world. Of course, if you haven't password-protected remote access to your Mac, anyone in the world can get into your files! Make sure you give yourself a password in the File Sharing control panel, and while you're at it, disable guest access (under the Users & Groups tab). This added measure of security will likely save you loads of trouble down the road. The last thing you want to do is worry about someone breaking into your Mac while you're busy buying stuff from Amazon.

Just because you aren't susceptible to most of the standard problems doesn't mean people won't try to get in anyway. There's not a whole lot to worry about as long as you've taken the precautions mentioned above. Still, it can be fun to watch amateur pranksters try to get into your machine. A few programs out there allow you to monitor unapproved attempts at accessing your computer, including NetBarrier from Intego (\$60, www.intego.com) and Norton Personal Firewall from Symantec (\$70, www.symantec.com). These apps let you see who is trying to access your Mac and what they're trying to do, as well as give you the ability to stop people from causing trouble. Such programs certainly offer interesting information, especially for the curious at heart, but they're not necessary for your broadband survival.



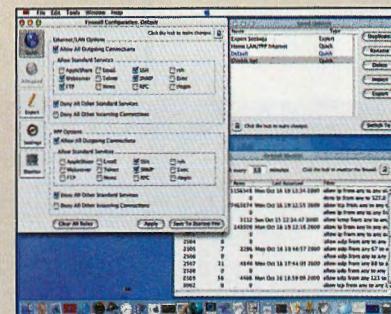
Make sure both the **Enable File Sharing Clients To Connect Over TCP/IP** and **Allow Guests To Connect To This Computer (under Users & Groups)** boxes are unchecked.



Personal Doorstop, now part of Norton Personal Firewall from Symantec, is a great way to monitor your Mac.

Mac OS X Security

With Mac OS X, you are susceptible to a slew of security issues that just aren't applicable in Mac OS 9. This is because Mac OS X is essentially a flavor of Unix at its core. Since Unix has been tweaked for most (if not all) Internet-related services, it offers many ways for people to attempt to break into your Mac OS X machine. Fortunately, Mac OS X also includes software that can block this type of activity. But the only built-in way to access this software is via Mac OS X's daunting command line. A few people out there are working on graphical interfaces for these commands. The most popular is BrickHouse from Brian Hill (free, http://personalpages.tds.net/~brian_hill/brickhouse.html), which allows easy tweaking of the settings that would otherwise require you to type arcane commands directly into your Mac.



BrickHouse lets you configure and monitor the firewall built into Mac OS X.

Come on, Baby, Light My Firewall

So you've heard the *f*word being thrown around, but you're not sure exactly what it means. By definition, a firewall is a wall that sits between you and the source of danger, protecting you from any harm. You have a firewall in your car between the passenger compartment and the engine. Little holes in the firewall allow electrical cables, the steering column, and so on to pass through. This allows you to access the controls you need but remain protected from parts of the engine compartment that could cause you harm, like the engine, hot oil, and gasoline.



Likewise, a firewall for your computer lets you perform the tasks you need to do, like Web browsing and checking email, and protects you from all the things in the

outside world that can harm your Mac, like hackers. Installing firewall software (such as NetBarrier or Norton Personal Firewall) on your computer doesn't really block hackers from getting into your machine, but it allows you to prevent the outside world from accessing certain services. For instance, your software can monitor access attempts at file sharing, FTP (file transfer protocol) requests, Web server requests, and mail server requests. Hackers often test these ports to see whether your computer is secure; if they get a response, it gives them hope that there might be something worth exploring. Mac OS 9 won't respond to any of the aforementioned requests other than Apple's File Sharing, though, so unless you're running Mac OS X, you shouldn't have to worry.

Share Your Broadband Connection

One of the big benefits of hooking up a fat pipe to your home is that you can share that connection with other computers and thus share the wealth.—DR

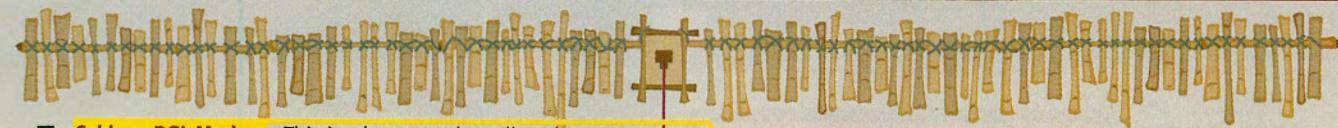
What you'll need:

- Cable or DSL modem
- Hardware router or Mac with two Ethernet cards to act as a software router
- Ethernet hub (some hardware routers have these built in)
- Ethernet cable

- Other computers to use the same connection

Cost: A hardware router runs from \$150 to \$250, while an Ethernet hub can be had for under \$50. A second Ethernet PCI card can be yours for around \$20, and Ethernet cable typically costs less than \$10 for 6 feet.

One word of warning: You'll need to check with your ISP to find out if it allows you to share a connection within your home. If it doesn't, and you violate your agreement, you may find yourself with a canceled account.



1 **Cable or DSL Modem**—This is where your broadband connection comes into your house. One port on the modem connects to your **cable or phone line**; the other is an **Ethernet port**, which connects to your router's Ethernet port.

2 **Router**—When it comes to routers (specialized hardware-software combos that route Ethernet packets to the appropriate machines), you can either buy a dedicated hardware router, or turn a Mac into a router using software.

Software Router—Plug the Ethernet cable from the modem into **one of your Mac's Ethernet ports**, then connect the Mac's **other Ethernet port** to an **Ethernet hub**. Use an Ethernet cable to connect each computer that will be sharing the connection to your router's hub. Install IPNetRouter (\$89, www.sustworks.com) on your host machine and configure it to connect to your cable or DSL provider (you'll have to get specifics from your ISP for this). You must also set IPNetRouter to provide IP addresses for each connected computer. If you don't feel like straining your brain to set up the somewhat confusing IPNetRouter, try IPNetRouter Configuration Application (www.sustworks.com/site/prod_ipr_config_app.html), which simplifies the process. Typically, you'll use the IP address 192.168.1.1 as your router's primary address.



Find a demo of Flash 5, in-depth tutorials with accompanying Flash files, and the game Max's PC Revenge on The Disc (also at www.macaddict.com/magazine/extra).

congratulations!

round 1

max's pc revenge



Since the beginning, serious Flash users have been stretching the boundaries of the software—creating unexpected results in animation, Web design, and even gaming. But with the release of Flash 5 (\$399, www.macromedia.com), game development has finally become more than a happy accident for Flash users. Through the combination of vector graphics, MP3-encoded audio, and a surprisingly flexible scripting language, Flash 5 is the perfect tool for creating interactive entertainment that hearkens back to the glory days of gaming when all our quarters went, not into laundry machines, but into classics like Pac-Man or Galaga.

Of course, this doesn't mean other tools for creating Web-friendly games—such as Java or even Macromedia's own Director—are on their way out. But while these are more general-purpose development tools, Flash caters to the elements you find in games: animation, sound, and interactivity. Add to that the fact that Flash won't cost you a month's

salary (if it does, you need to have a talk with your boss), is fairly idiot proof, and is widely supported by Web browsers, and you'll understand why it's such an easy choice for game development. Plus, people will think you're cool when you tell them you know how to use Flash.

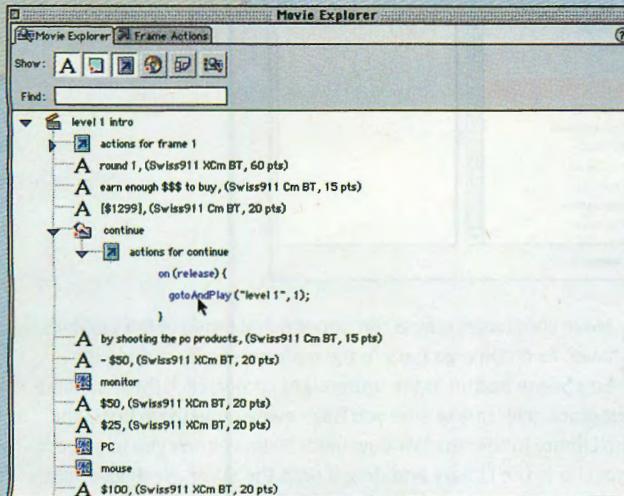
But what about those of you who don't have previous experience with scripting languages? Don't worry—by the time you finish reading this article, even programming virgins will have mastered the basics required to make a great game with Flash 5. In the following six pages you'll find information on how we assembled our game, Max's PC Revenge, including advice on putting together a game plan, creating graphics, importing sounds, and creating the ActionScripts that tie it all together. And when you've got the basic idea, you'll find a collection of step-by-step tutorials on The Disc and the Web specifically designed to get you up and running as a Flash 5 game developer. As for those of you who already have mad programming skillz, you're going to have a great time playing around with all the new possibilities in Flash 5. So what are you waiting for? Let's make some games!

Use Flash 5 to create your own interactive fun for the Web

by Patrick Baggatta

Flashy New Tools

While Flash 5 boasts a few new features, such as better color controls, improved drawing tools, and a new Movie Explorer that makes it easy to keep track of even the most sprawling Flash project, the real excitement this year lies in the overhauled ActionScript library. This is also where most of the game development magic lives, so start warming up the right side of your brain.



The new Movie Explorer promotes sanity even under the most insane working conditions by giving you a view of your project in a treelike menu.

Why do you need ActionScript? If you've had any experience with Flash, you undoubtedly have tried to make some kind of animation. Now imagine if you could enable the viewer to reach into the screen, grab the items in your movie, and move them to a new part of the screen—or make them release a blood-curdling scream when you drop them into an animated fire. This is the beauty of ActionScript.

You access the ActionScript editor (called the ActionScript Panel) by selecting Actions under the Window menu. The ActionScript Panel features two modes. Normal (the default mode) handles programming syntax issues and won't let you construct an improper script no matter how hard you try—and you *will* try. Expert mode provides a blank page for writing scripts from scratch—change to this mode by clicking the arrow in the upper-right corner of the ActionScript Panel.

Although earlier versions of Flash included scripting features, Flash 5 is a big step forward. The entire collection of new ActionScript commands is far too long to list here, but a few of the notable additions include:

New Advanced Looping Commands

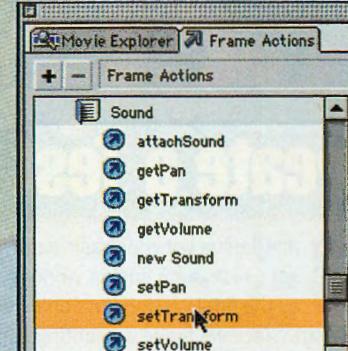
Unlike a standard Flash animation, which runs from the first frame to the last, a game usually needs to loop so the player can control when the game ends. Also, new commands such as *do while* add even more control by allowing you to specify a condition (for example, *do while* the player's character is on the left side of the screen) that governs the length of the looping action.

Hide or Replace the Cursor with a Customized Icon

This is useful in games in which you use the mouse to control an element. However, this feature is slow.

Sound Controls

By using ActionScripting to control the sound in your game, you can make audio part of the fun.



A host of new sound controls gives you the freedom to rock.

Handy Collision Detection Tools

With the *hitTest* script, it's easier than ever to check whether two (or more) objects onscreen are touching each other—a valuable feature in game development.



This baby allows you to test whether two objects are touching.

Getting Started

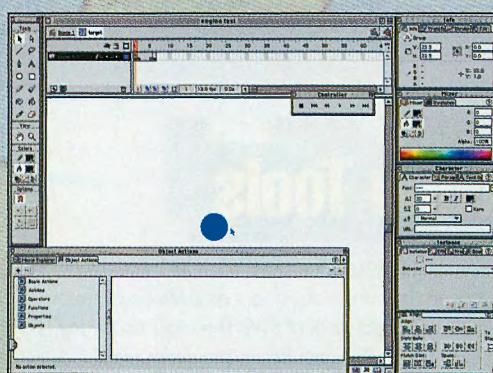
GK, so you think you've got a game idea so cool it just can't wait. Whoa, slow down a little. Let's make sure your idea has wings before you get yourself into some kind of scripting nightmare. If this is your first game, your best bet is to start with something simple. The following five tips should keep you out of trouble.

- 1. Work in 2D.** Flash does not recognize 3D space—you can figure out ways to fake it, but this is for advanced users only.
- 2. Use vector graphics.** Bitmaps can be fun (celebrity heads come to mind), but nothing keeps down file size like vector graphics.
- 3. Limit motion.** When you've got too much going on, your entire game will slow down.
- 4. Limit sound loops in size and number.** A multitude of sound files or really big ones (more than a few seconds) slow down a Flash game enormously.
- 5. Stay focused.** You will probably have 50 new ideas once you've started developing your game, but concentrate on your original concept. In our game, Max's PC Revenge (a target shooting game featured on The Disc), we focused on random target generation and responsive shooting action so the game would move fast.

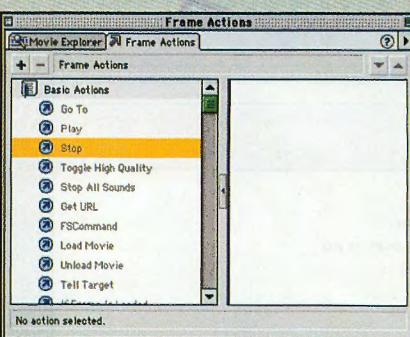


Give it up. While it would be nice to make the next Quake-killer in Flash, it just isn't going to happen.

2 Now you'll build a target. Create a movie clip called *target* by selecting New Symbol from the Insert menu. Using the drawing tools, create a simple object like a circle (if you don't see the drawing palette, select Tools under the Window menu). Go to the Symbol Edit mode by clicking the Edit Symbols icon in the upper-right corner of your Flash interface, then click the first frame of the movie clip. Head over to the ActionScript Panel and select Stop from the Basic Actions menu. Then click the second frame and add a keyframe (select Keyframe from the Insert menu). Draw a shape that represents your bullet hole in the circle, then add five more frames following your keyframe by selecting Frame under the Insert menu—this will give your game some time to display the bullet hole when it plays.

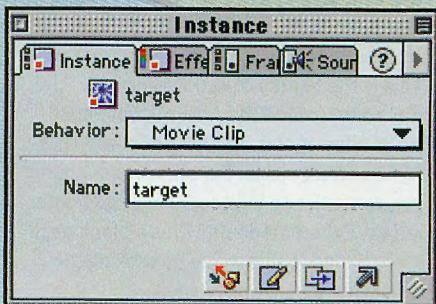


Ninth-grade geometry comes in handy right about now.



For your first foray into the ActionScript panel, all you need to do is add a Stop action to the first keyframe.

3 Move your target movie clip into the first frame of the graphics layer. To do this, go back to the main screen by clicking the Edit Scene button in the upper-right corner, click the first frame of the graphics layer (make sure you have a keyframe there first), and open the Library (under the Window menu)—this allows you to select the target clip in the Library and drag it onto the stage. Next, give your target an instance name of *target* by clicking the Instance tab on one of the floating palettes to the right of the stage. Basically, symbols are your objects, and instances are the occurrences of these objects in your game. Try to keep the symbol names and the instance names the same, although at times you'll have the same symbol all over a screen and each example will need a different instance name.

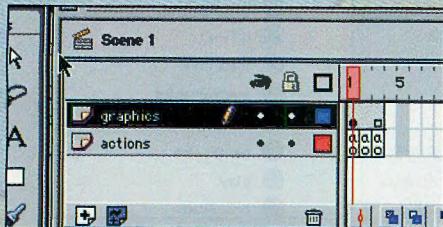


Let's play "match the symbol name to the instance name."

Create a Test Engine

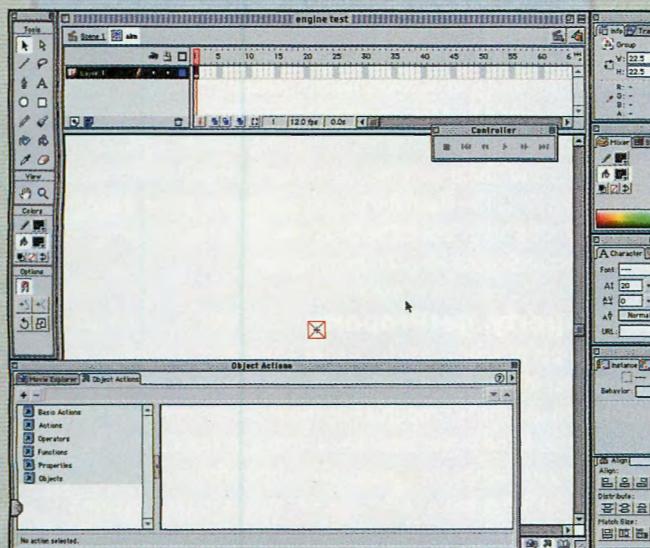
GOnce you've got your basic game concept down, it's time to get a test game engine working. This is not likely to end up as the final version, so don't worry about making museum-worthy art. Since we made a shooting game, we'll create an onscreen target that reacts when shot. You can find the Flash file of our test engine on The Disc and the Web.

- 1** Create two layers by clicking the Insert Layer icon near the upper-left corner of your stage. Name the first layer *graphics* and the second one *actions*.



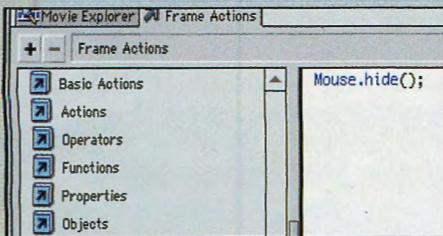
Keep your graphics and scripts on two different layers.

4 Create a movie clip symbol called *aim* that looks like a crosshair target and place it on the stage (also in the first frame of the graphics layer). Give it an instance name of *aim*.



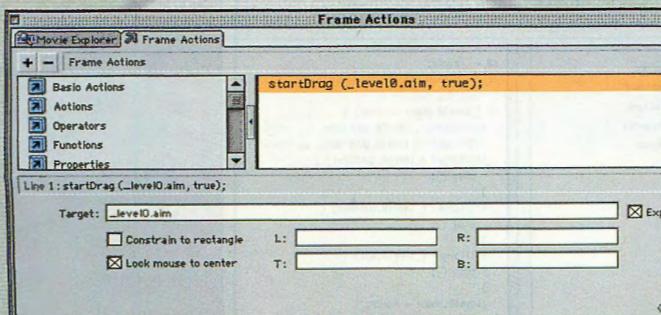
Ready, aim, fire! This is our aim crosshair symbol, which will replace the mouse cursor.

5 Now it's time to do some simple scripting. Whenever you do any kind of free scripting, you must switch from Normal to Expert mode. Click the first frame of the actions layer; using the ActionScript Panel, add the script shown below. This hides the normal arrow cursor.



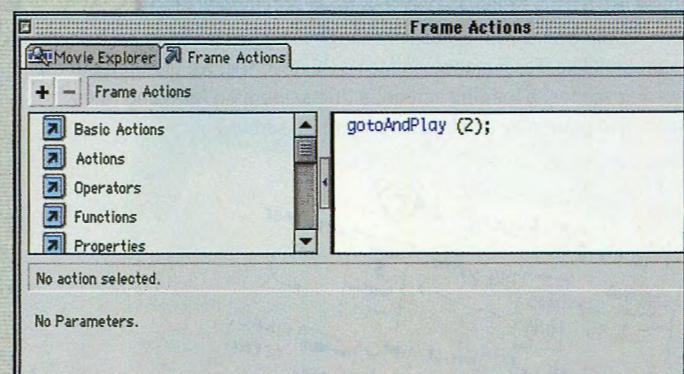
This one-liner represents the script you'll use to make the normal arrow cursor disappear like David Copperfield's career.

6 In frame two of the actions layer, add a keyframe and select the StartDrag command under the Actions heading of the ActionScript Panel. This will bring up a few text fields at the bottom of the ActionScript Panel. In the Target field, type *_level0.aim*. This refers to the instance name *aim* of your crosshair symbol. *_level0.* is the path used to identify the level on which the movie clip exists. This is not important right now since our example has only one level, but it is essential that you identify the movie clip with the full path. Finally, check both the Expression and Lock Mouse To Center boxes. Your script for this frame should end up looking like the screen below:



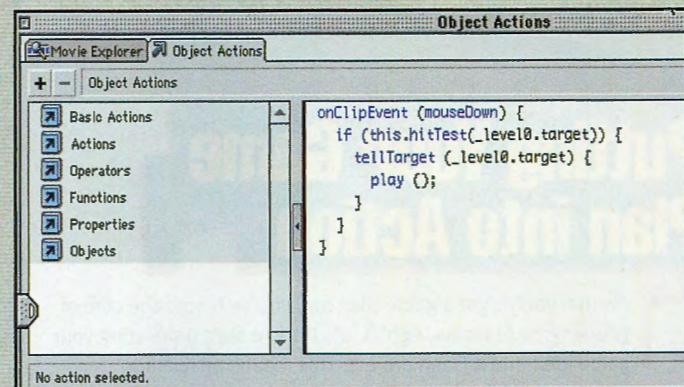
This script will make your new graphic act as your cursor.

7 Add a keyframe in frame three of the actions layer and add the script shown below. This will keep your game actions looping. At this time, you should also make sure your graphics layer extends through frame three.



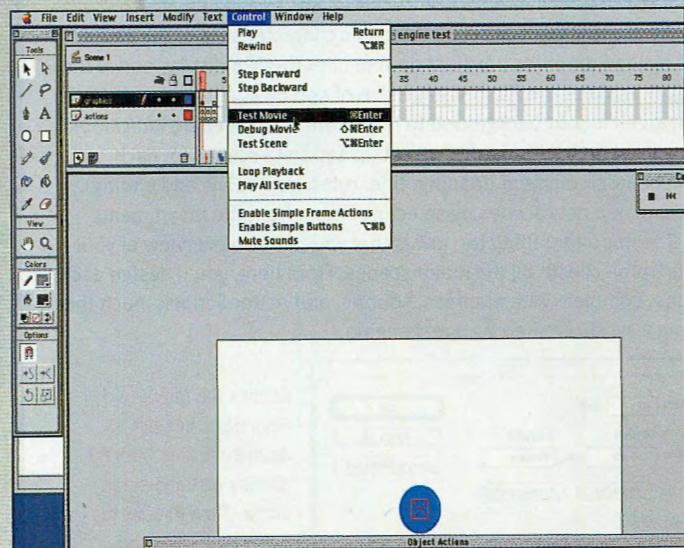
This script will keep the action in your test engine loop-de-looping.

8 Click your aim symbol and add the ActionScript shown below. This script should not go into a keyframe—rather, you should attach it directly to the aim movie clip. This is where we test to see if aim and target are hitting each other.



Here's the script you'll want to attach to your aim movie clip.

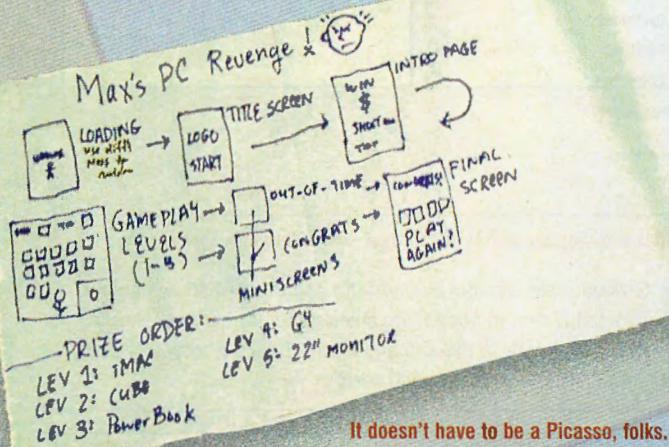
9 Test your game (select Test Movie from the Control menu), then check it by moving the crosshair over the target and pressing the mouse button. Pow!



The last step is to test this little lady.

Writing a Game Plan

K—it's time to grab that number 2 pencil and create a game plan. One of the easiest and most effective methods is to storyboard your ideas with rough sketches for what each scene should look like. For instance, in Max's PC Revenge, we planned out the following scenes: a loading screen, a title screen, an intro and rules screen, five gameplay levels, and an ending screen.



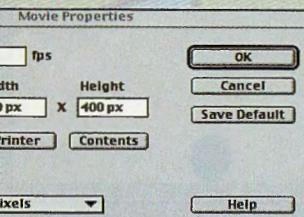
Putting Your Game Plan into Action

Now that you've got a game plan and you've tested the core of your engine (it works, right?), it's time to start translating your game idea into a Flash project. This means answering questions such as:

- How big should your game screen be?
- What color should you make the background?
- How many different scenes will you need to set up?
- What are the primary ActionScript commands you'll use?

Next, you'll want to set up the basic characteristics of the game in the Movie Properties box (just double-click the FPS display above the stage). We kept the Flash 5 stage size of 550 by 400 pixels and chose soft green for our background to match the ultracool *MacAddict* look (insert pat on back). Finally, we set up separate scenes for each storyboarded element (loading, title, rules, gameplay, and ending). You can add new scenes by selecting Scene from the Insert menu.

The important thing for now is that you have an overview of your entire project with all the major scenes. From here, you'll design each scene, complete with graphics, sounds, and ActionScripts, much the same way you created your test engine.



Access the Movie Properties box by double-clicking the FPS display just above the stage. Then choose the basic properties for your game.

Ready, Set—Action!

Since ActionScripts are the heart of game design in Flash 5, we used quite a few of 'em to design Max's PC Revenge. But ActionScripting is a complex topic, so we decided to cover it in more depth on The Disc and at www.macaddict.com/magazine/extra. In both places, you'll find five comprehensive, step-by-step tutorials covering different topics—including moving objects, collision detection, conditional statements, interactive control, and keeping score—as well as the Flash file for our completed game. But before you go running off to insert The Disc, check out the following primary ActionScripts we used in our game:

setProperty, getProperty

These scripts provide a way to change and determine the properties of an object in your game, such as its size, position, and visibility. You'll often use these properties as the result of some game action. For example, if the player steers a car into a guardrail, you might use `setProperty` to change the `_x` position (the horizontal position onscreen) of the guardrail when the car strikes it. (See Lesson 1: Moving Objects.)

set variable

This script offers a way to set a dynamic element in your game, such as a score that changes as the player advances, a timer, or a million other things. You'll use it all the time, although you might not actually see the words `set variable` in your script. Instead, it will look something like this: `score = 0`. (See Lesson 2: Collision Detection.)

hitTest

This script provides a way to determine whether two objects are touching each other onscreen. When properly used, `hitTest` can actually check the collision status of an object (or multiple objects) in every frame of your game. (See Lesson 2: Collision Detection.)

if, else if

These scripts allow you to add variables to your code: for example, "If the player has moved to this part of the screen" or "If the score is larger than 100" or "If this object touches this other object"—you get the idea (we hope). (See Lesson 3: Conditional Statements.)

tellTarget

This script gives you a way to single out a specific object in your game (such as an enemy character) when you want it to do something special. We used this feature extensively in the Max's PC Revenge Flash file to achieve effects such as the bullet-flare animation you see when you shoot the gun.

```
// getting mouse position //
_x = _xmouse;
// end getting mouse position //
// shooting routine //
if (_level18.shoot == true) {
    setProperty (_level18.gunblast, _x, _ymouse);
    setProperty (_level18.gunblast, _y, _ymouse);
    tellTarget (_level18.gunblast) {
        play();
    }
    tellTarget (_level18.gunload) {
        play();
    }
    tellTarget (_level18.maz) {
        play();
    }
    _level18.shoot = false;
}
if (_level18.shoot2 == true) {
    setProperty (_level18.gunblast, _x, _ymouse);
    setProperty (_level18.gunblast, _y, _ymouse);
    tellTarget (_level18.gunblast) {
        play();
    }
    tellTarget (_level18.gunload2) {
        play();
    }
}
```

This is part of a sample script from Max's PC Revenge in which we use `set variable`, `tellTarget`, `setProperty`, and `if statements`. The comments in purple should give you some idea what we used each of these common scripts to achieve.

Creating Graphics

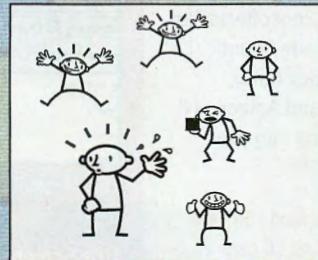
So you've got your storyboards, you have an idea of the ActionScripts you'll use, and you've set up a basic structure for your game in Flash. It's time to make this baby look good!

Drawing Tools

For drawing basic graphics—or for the artistically challenged—Flash 5 offers a nice environment for creating all kinds of spiffy graphics. For instance, we created pretty much all of the graphics in Max's PC Revenge in Flash (see "Drawing in Flash 5," below, for a closer look at the tools). However, for ultimate flexibility, use either Illustrator or FreeHand to create and then import your graphics into Flash. Also, don't forget that Flash will allow you to import bitmap graphics, so if you want to use a photo of a friend (or George W. Bush, for that matter) or a background scene, you can import that JPEG or GIF.

Character Design

Consider a few things before designing your characters. For example, will you be animating he, she, or it? How many different angles of your character will you need to illustrate? Also, from what perspective will you view your characters? If, for example, you're going to look at your character from above, you may want to give it some kind of wacky hat (à la the Archer in Gauntlet) to help it stand out.



Here Max models the many different stick figure poses.

Background Design

Think of your game as its own little universe and the background design as the element that ties it all together. This doesn't mean you have to create a beautiful work of art—even simple drawings of mountains, a star field, or a giant smiley face will work.

Drawing in Flash 5

We created all of the graphics for Max's PC Revenge, including the G4 below, using Flash's drawing tools. Here's a look at some of the tools you'll be abusing:

Rectangle: Use this tool to create rectangles of all different dimensions. Here's a little tip: Starting with a simple shape like a rectangle, then modifying it until it looks like the shape you want, is easier than creating a complex shape from scratch.

Pen: Just like the one in Illustrator or FreeHand, the Pen tool (new to Flash 5) can make precise lines and curves.

Oval: This tool works similarly to the rectangle tool—use it to create a variety of oval shapes.

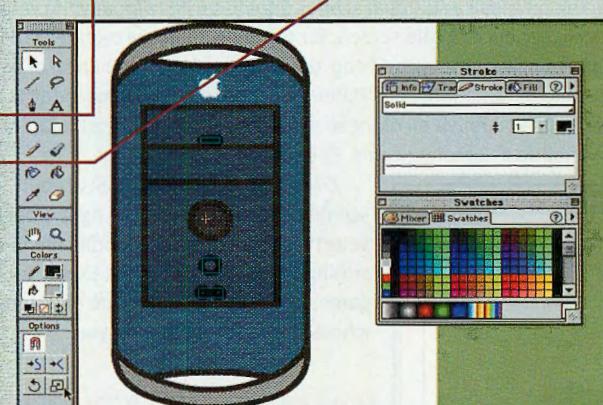
Pencil: This tool draws lines as solid, dotted, straight, curved, thick, thin, and so forth.

Smooth: Use this tool to smooth lines in illustrations.

Rotate: This tool can rotate an image 360 degrees around its center point (you can move this point). You can also perform rotations with ActionScript using the setProperty command.



Paintbrush: This lets you add color to illustrations. You can even use it to apply bitmap patterns in your illustration.



Straighten: Use this tool to straighten or add sharp-edged corners to illustrations.

Scale: This tool can scale the size and dimensions of your illustration. You can also control scaling with ActionScript using the setProperty command.

A Style to Remember

As our mother used to tell us, "You're talented in your own special way." When it comes to drawing, it's important to take those words to heart and realize there are many different styles, all of which work in their own special way.

Ultrasimplistic: So you can't draw anything but stick figures? Go with it. Some of the greatest games feature basic images. Asteroids, anyone? By using simple graphics, you may also avoid some of the slowdown problems often associated with Flash games (at least that's what you can tell people).

Highly Illustrative: This is for the more artistically inclined. Just remember that more detail can affect the speed at which your game runs.



Going the extra mile on your illustrations can yield cool results.

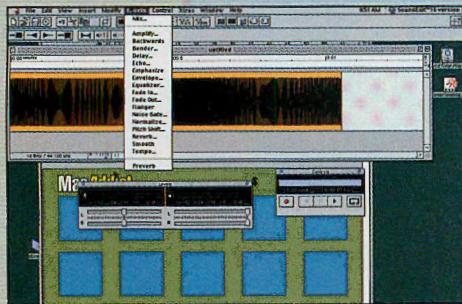
3D: Although Flash does not specifically understand 3D space, it is possible to create 3D-ish graphics within Flash. Or try an app such as Swift3D (\$139, www.swift3d.com), which allows you to create 3D graphics and import them into Flash.

Finishing Touches

When you've finally got your game working with graphics and ActionScripts, it's time to add some finishing touches: namely, sound effects and music, as well as any additional scenes to frame the action sequences.

Sound

Adding sound to your Flash 5 game is easier than ever, but don't get carried away—scripting your game to the full 128-Kbps MP3 of "Stairway to Heaven" just ain't going to cut it (you want it playable, don't you?). Besides, you can't legally distribute the music (and hence your game). It's best to start with only the essential sound effects and music (we used royalty-free sound clips), then work your way up from there. You may also benefit from working with sound editing software—for instance, the discontinued Macromedia SoundEdit 16 can get the audio file sizes down to a manageable level or add cool effects like reverb, echo, chorus, and so on. Other sound editing apps include Sound Sculptor II (\$30, http://members.aol.com/_ht_a/sculptorii/index.html), Sound Studio (\$35, www.feltip.com/products/soundstudio), and Amadeus II (\$25, www.unige.ch/math/folks/hainer/martin). To import sound into your game, just select Import from the File menu.



Additional sound software like SoundEdit 16 can really get your audio under control.

TIP

You can download free sound effects for your game from many places on the Web. You'll find a long list of free audio sites at www.flashkit.com.

Additional Scenes

At this point you already should have accounted for any additional screens (such as title and rules) in your game plan and even have placeholder scenes set up for them in your Flash project.

Polishing off these additional scenes should be easy for anyone with a little Flash experience. A title screen, for example, typically requires little more than a single frame with a Stop action and a Continue button of some kind (for more information, see "Flash 101," Jul/00, at www.macaddict.com). Not until you finish all of these extra scenes will you really start to feel like you've made a complete game. Feels good, doesn't it?

Once you've completed all of your scenes, arrange them in the right order by selecting Scene from the Modify menu and editing the order as needed. Export your game, and Flash will take care of putting the whole shebang together for you.

Even if you're not the orderly type, you'll want to make sure the game's scenes are in the right order.

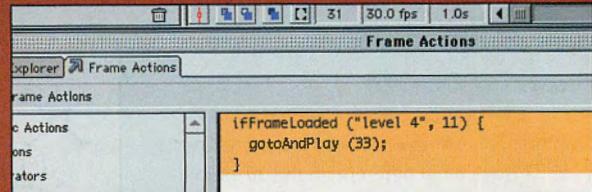
Once you have your Shockwave game up and running, send it to letters@macaddict.com for a shot at getting it posted on our Web site.

Patrick Baggatta runs Astromanic Studios—a multimedia development shop specializing in making shiny digital objects move around and produce noise.

Extra, Extra!

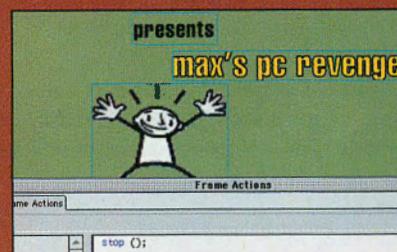
While the gameplay scenes are the most important part of your game, they mean much less without a supporting cast of introductory, in-between, and closing screens. We also took these scenes as an opportunity to show off cute little Max. Take a look at the extra scenes we put together for Max's PC Revenge.

Loading Screen: Creating a loading screen in Flash 5 is easier than ever. Use the `ifFrameLoaded` script under the ActionScript Panel's Actions tab to make sure your game is fully loaded before going on to the actual gameplay scenes.



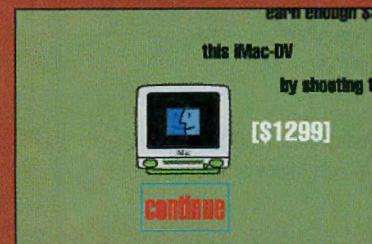
The `ifFrameLoaded` script makes loading screens a breeze.

Title Screen: This one is very easy. All you need is a strategically placed Stop script and a Play button.



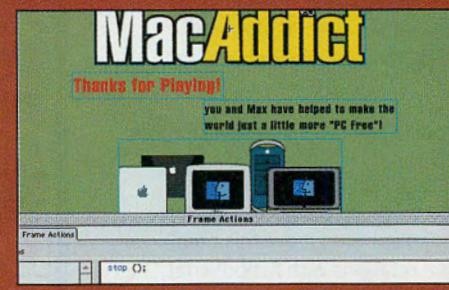
Don't forget to include a Stop script in the first (and only) frame of your title screen.

Level Intro Screens: Much like the title screen, the level intro screens in Max's PC Revenge require only one frame, with a Stop script and a Continue button.



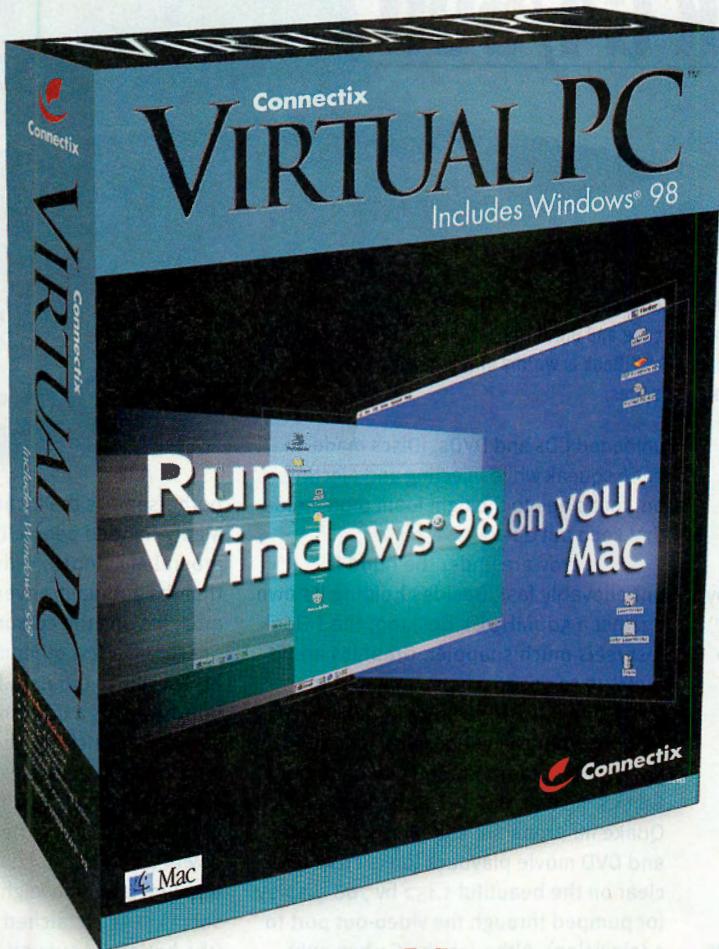
Once you've got your Stop script in place, you'll need to create a Continue button.

Final Screen: All you need here is—you guessed it—one frame with a Stop script and a Play Again button.



If you forget to add a Stop script to the last screen, you won't give people enough time to enjoy your clever final words.

A More Powerful Virtual PC



Now, up to twice as fast!

Virtual PC 4 puts a fast, powerful PC inside your G3 or G4 Mac, enabling you to run PC applications, access PC networks, share files with PC-based colleagues, and use PC-only services and applications. The latest version of this award-winning software from Connectix runs PC operating systems up to twice as fast as previous versions, so it's easier than ever for Mac users to stay compatible with the PC world.

What's new in Virtual PC 4? Improved features in Virtual PC 4 include faster performance, larger disk images, easier to use interface and help system, and the ability to run multiple PC operating systems simultaneously. Run PC software faster and better than ever with Virtual PC from Connectix. Go to www.connectix.com for more information or to purchase Virtual PC.

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 **Connectix**

reviews

We love the smell of Titanium in the morning.

PowerBook G4/500

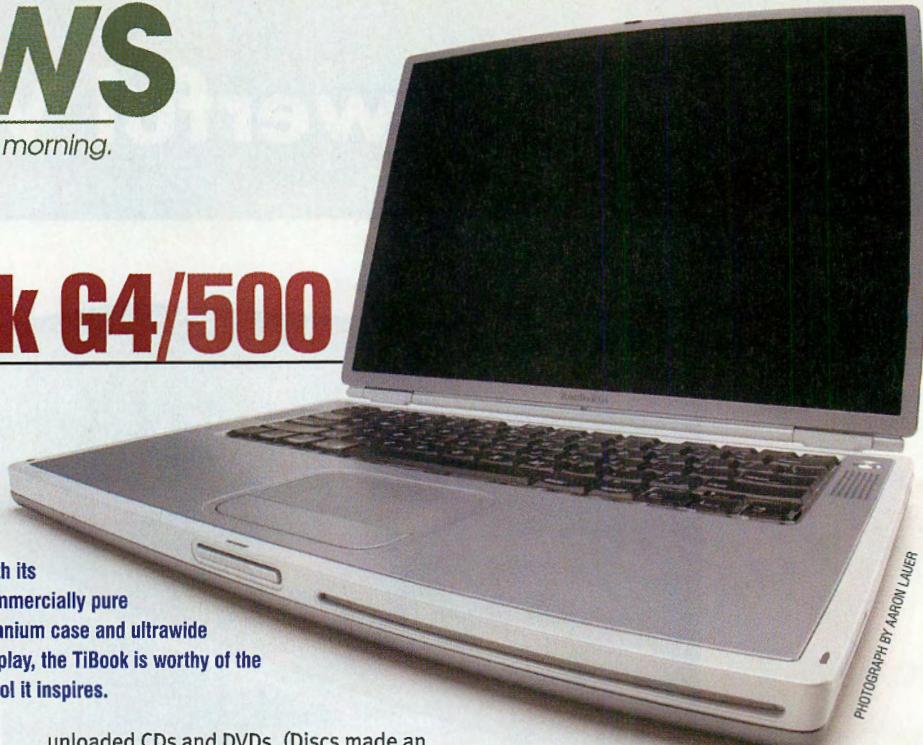
hardware

Company: Apple Computer

Contact: 800-692-7753, www.apple.com

Price: \$3,499 (SRP)

Requirements: 500MHz G4 processor, 20GB hard drive, 256MB of RAM, ATI Rage Mobility with 8MB of video memory, two USB ports, one FireWire port, audio out, S-Video out, VGA out, 10/100-Mbps Ethernet, 56-Kbps modem, PC Card slot, AirPort card slot



PHOTOGRAPH BY AARON LAUER

With its commercially pure Titanium case and ultrawide display, the TiBook is worthy of the drool it inspires.

When the PowerBook G4/500 first showed up in our offices, folks came from far and wide (some from as far as 500 feet!) to take a peek at the svelte, powerful new portable. A steady trickle of onlookers has passed by for nearly two weeks now, and every time someone comes over and just *happens* to spot the TiBook (PowerBook G4 Titanium) sitting out, they want to pick it up and caress it. A few have even attempted to "borrow" it for "just a few minutes." This reaction is the mark of a hit product, and Apple has one in its hands with the PowerBook G4/500.

After several years of the same basic case design with the same basic G3 processor, the latest PowerBook represents a sleek departure. It boasts a thinner, lighter case; a much beefier processor and motherboard design; a better keyboard; and the most beautiful flat-screen display ever attached to a portable. The titanium enclosure feels more solid than that of previous G3 PowerBook designs (it doesn't flex when you pick it up by a corner, for example), plus it just looks cool—all that shiny silver.

It's the attention to design detail that makes the TiBook such an amazing beast. For example, the keyboard has the best touch of any PowerBook keyboard we've used. When you lift the keyboard off the frame, you'll see why—eight small magnets under the keyboard clasp it tightly to the frame itself. The slot-loading DVD drive presents its own share of problems (how do you eject a stuck disc?), but our test unit worked perfectly each time we loaded and

unloaded CDs and DVDs. (Discs made an eerie squeak while injecting and ejecting, but that's due to the tight foam protectors that keep out dust.)

The hardware under the hood is unbelievably fast. Besides holding its own against a 500MHz G4 desktop, the TiBook just *feels* much snappier. Graphics aren't quite up to speed when compared to those of a full-fledged nVidia GeForce2 MX, but what can you expect from an ATI Rage Mobility with 8MB of video memory? Games such as Unreal Tournament and Quake III: Arena are still plenty playable, and DVD movie playback looks crisp and clear on the beautiful 1,152 by 768 display (or pumped through the video-out port to a television). Although the G4 has only one FireWire port (rather than the two in previous G3 models), we didn't miss the second port at all, nor did we find that the absence of an audio-in jack presented a real problem.

Because the G4 chip puts out so much more heat than the G3, Apple engineers had to come up with a novel way of bleeding that heat into the air. They did so by connecting the heat sink to the titanium frame, which makes your PowerBook G4/500 a wonderful friend to have on a cold day. The bottom of the unit and the back of the monitor get toasty, but they won't burn you. Hey, you have to pay *some* price for all that power. Surprisingly, the battery will supply that power for hours. We got over four hours of battery life from our PowerBook G4/500.

Apple's new case design does have a couple of problems, however. The most

bothersome is the location of the trackpad. Meaty-handed people (there are a few around *MacAddict*) will find that their thumbs and palms overlap the trackpad area, making the cursor jump around onscreen. A few other minor quibbles may be specific to our unit. First, the trackpad button seems a little soft. During drags, it sometimes unclicks, dropping dragged items in random places. The power cord also tends to slip a bit out of the receptacle at the back, putting the 'Book on battery power without your knowledge. Though titanium is a lightweight, hard metal, it seems to get scratched up pretty easily (the bottom of our unit had several visible marks after just a week of use), and the case's untreated interior portion picks up fingerprints like Fox Mulder on a hot case.

The PowerBook G4/500 is a killer piece of gear. It's powerful, sleek, and stylish, and it serves well as a desktop replacement for folks who don't need to add PCI cards to their Macs. Despite our quibbles with the trackpad placement, loose power cord, and soft mouse button, almost everyone who's seen the PowerBook G4/500 wants one. Some people may prefer the Sony Vaio's ultrasmall size, but even *these* users will give the PowerBook G4/500 its due as a great device.—David Reynolds

good news: Amazing display. Great keyboard touch. Wicked fast. Stout case design. Very, very thin.

bad news: Awkward trackpad position. Case scratches easily.



Under the Hood

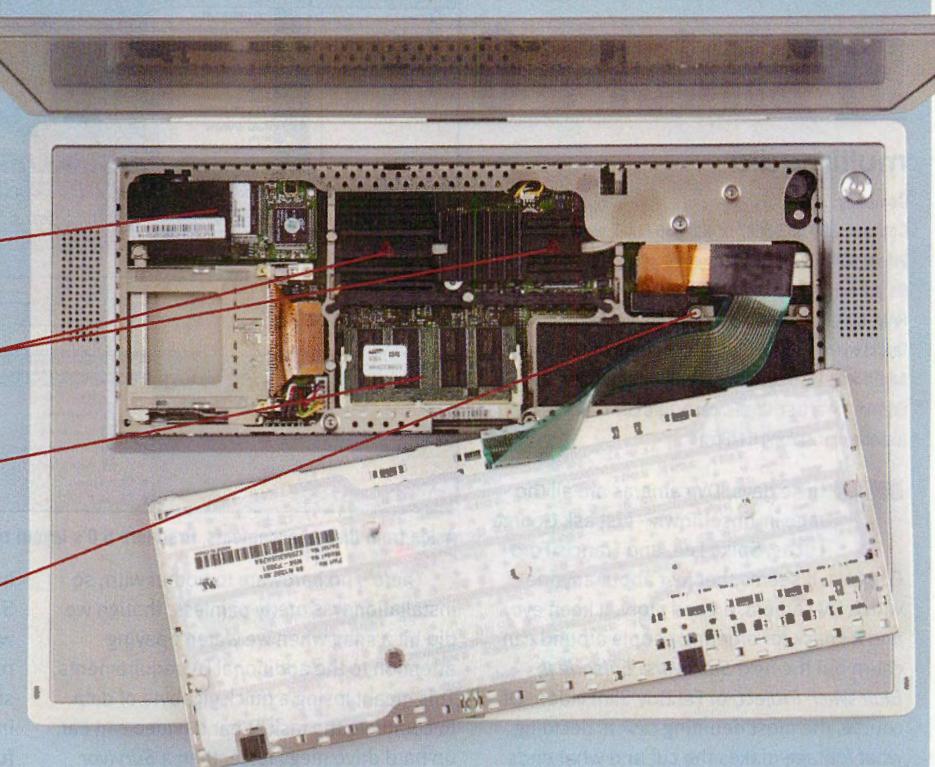
You get inside your PowerBook G4 the same way as in previous models—pull back the two keyboard latches to lift off the keyboard and reveal the RAM slot underneath.

Modem. This 56-Kbps modem gives you the ultimate in traditional phone-based connection speeds.

Heat sink. The G4 throws off enough heat so that it takes these two heat sinks plus a metal rod connected to the frame to get rid of it.

Memory slots. The G4 ships with slots for two RAM sticks, with one typically empty. To add your own, pull up the keyboard via the two unlocking latches and drop in a stick.

Anchor magnet. Eight of these small magnets attach to the frame, pulling the keyboard in snugly and keeping it from rattling as you type.



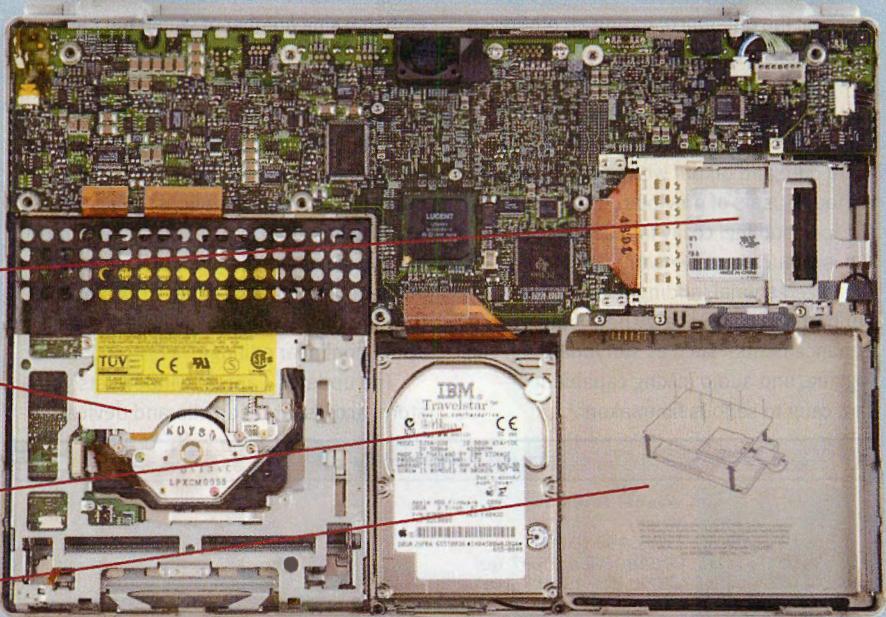
Apple has moved the Airport card slot underneath. To access it, you must pull off your PowerBook's bottom enclosure by removing eight Phillips screws. This also reveals more of the PowerBook's innards.

AirPort slot. Just like the rest of Apple's product line, the PowerBook G4 has an Airport card slot, but this one is tough to access. Fortunately, you should only have to do that once.

DVD drive. A few folks have complained about this slot-loading drive getting jammed, but ours worked perfectly.

Hard drive. Upgrading your hard drive is simple—just pull it out of this slot.

Battery slot. The battery slot has an easy-to-follow pictogram showing how to remove the G4's bottom case to install an Airport card.



Premiere 6

multimedia

Company: Adobe

Contact: 800-833-6687 or 408-536-6000, www.adobe.com

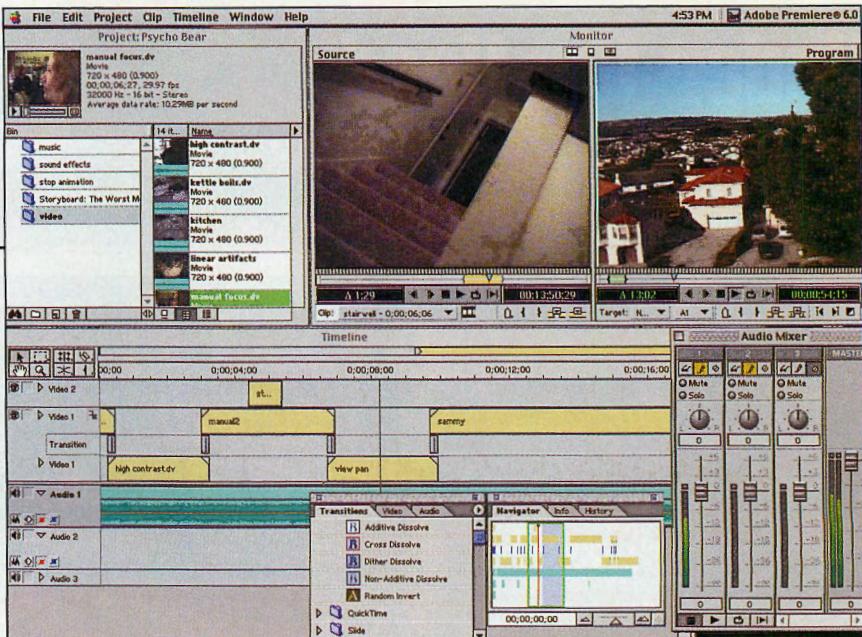
Price: \$549 (SRP), \$149 (upgrade)

Requirements: PowerPC, Mac OS 9.0.4 or later, 32MB of RAM, 50MB of free hard disk space (for installation), QuickTime 4.1.2 or later, large-capacity hard disk or disk array

Additional DV Requirements: 300MHz or faster PowerPC, FireWire 2.4 or later, large-capacity hard disk or disk array (capable of sustaining 5 MBps)

These days, DV cameras are all the rage in Tinsel Town—just ask George Lucas, Spike Lee, and Francis Ford Coppola. It seems that just about anyone with a DV camera, a good story, a keen eye, and a knack for ordering people around can churn out the next *Star Wars: Episode II*, *Blair Witch Project*, or Fat Boy Slim video. Of course, the most daunting task is deciding what footage makes the cut and what ends up on your hard drive's "floor." An intuitive video-editing program like Premiere can make all the difference, easing an otherwise painstaking process.

Though the move comes a bit late, Adobe has finally wised up and cracked the whip, bringing its stalwart video editor up to date and on par with the competition. Although users of previous versions will find the look and feel cozily familiar, Premiere 6.0 is a much more versatile, better organized animal, adding DV support and some snazzy new features and enhancements—such as storyboarding, clip logging, and audio mixing capabilities—that cater to serious filmmakers.



Aside from the enhancements, Premiere 6.0's layout remains pretty much the same.

There's no hardware to bother with, so installation was pretty painless, though we did hit a snag when we weren't paying attention to the additional DV requirements. This meant losing a quick gigabyte of data to complete the task at hand (video can eat up hard drive megs faster than a *Survivor* contestant can eat cow brains). After rifling through the drive and trashing an embarrassing number of stupid pet pics, we were good to go.

While Premiere 6.0's interface hasn't changed much, the enhancements sprinkled throughout have really beefed up the program. For instance, the Timeline now offers two workspace options: you can stick with the easy-to-use A/B Editing (two-track) workspace or use the more precise and efficient Single-Track Editing workspace (best for those who already have a clue about nonlinear editing).

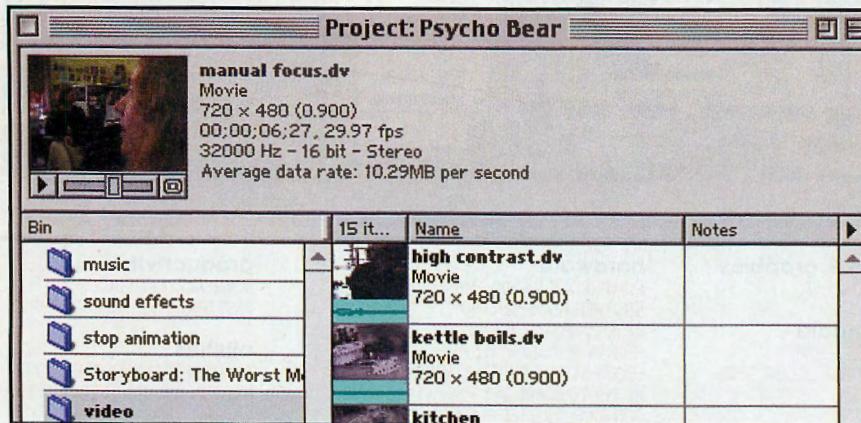
The updated Capture window lets you store, access, and edit clip and device

information with the new Logging and Settings controls. The Capture Settings window features a number of adjustable presets that let you capture clips at the same resolution ratio as your video source instead of guessing (the latter can cause funny things to happen).

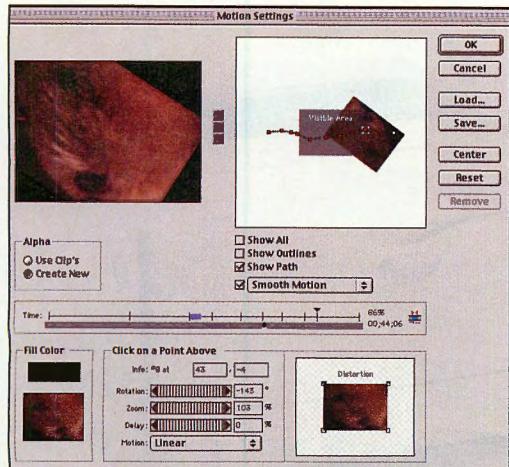
Capturing video is a snap—just plug a DV camera into your Mac's FireWire port and open the Movie Capture window. With device control (the ability to control your camera through Premier), you can quickly cue up footage on our camcorder directly from the Capture window's playback controls. A couple of times we encountered error messages that prohibited us from capturing, though the problem went away after we simply closed and then reopened the Capture window. We've experienced frequent frame-dropping problems with older versions of Premiere, but Premiere 6.0 doesn't have this issue—hallelujah!

After capturing clips, you name and save them into the much-improved Project window—no more having to import captured clips manually. The Project window stores all of the individual segments that comprise your movie, but now it lets you organize them. Clips are stored in Project Bins—these allow you to separate video segments from audio or divide footage according to scenes. You can also preview clips as thumbnails and rearrange their order.

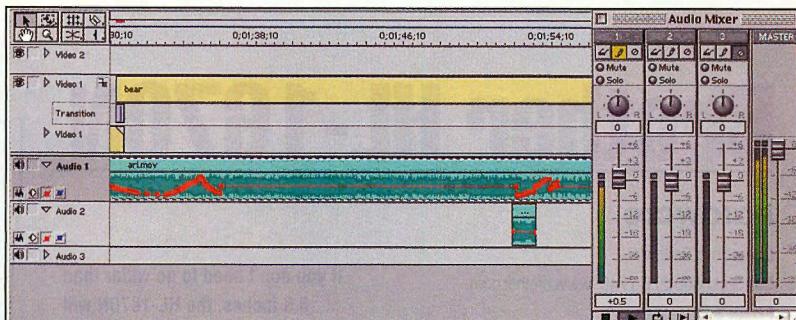
Building a movie is simple: Just drag and drop clips from either the Project or Monitor window straight onto the Timeline. Video handling in the Timeline window is a lot less frustrating than in previous



The new Project Bins allow you to sort through and separate audio and video clips more efficiently.



The Motion feature allows you to create moving graphics from any clip for eye-catching special effects.



The new Audio Mixer sports strip controls like those found on real audio consoles, though they could use a virtual shot of WD-40.

versions—some of the editing tools provide much clearer visual feedback, making it easier to keep track of edits. Before, a misplaced edit could cause video and audio to shift if you weren't paying close attention. The quick-access buttons located at the bottom of the window—like the Toggle Sync mode, which keeps audio synced to its respective track—prevent that from happening.

In spite of the efficiency enhancements, the amount of time it took to render preview sequences on the Timeline is disappointing. For example, it took well over 10 minutes to render an old-time, scratchy, sepia video effect on a 14-second clip, and 15 minutes to color-emboss a 13-second clip—and we were testing the program on a G4. Thankfully, less intensive effects such as transitions rendered more quickly.

Playback in the Monitor window is stable, making scrubbing (the process of moving back or forth within an audio or video file) footage an easy task. Video ran smoothly, without the previous version's occasional hiccups. The Monitor window offers three viewing modes: Dual View, Single View, and Trim. Though we had no use for Single View, the Trim mode was especially handy for fine-tuning edits—such as adding transition frames to a clip.

The new Storyboard feature earns some brownie points (although we wish Adobe had introduced it a lot sooner). It lets you visually arrange your clips in sequence before committing them to the Timeline. You can eyeball thumbnails of your clips, making arrangements quick and painless—no more scrutinizing a mystery

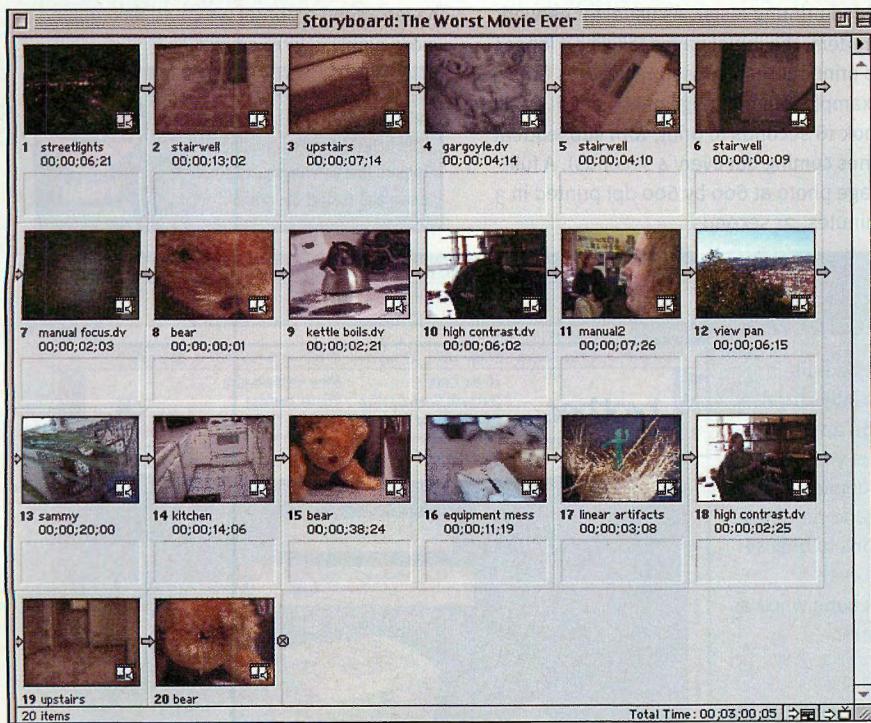
bar or clip name in the Project window. You can also edit in and out points from here.

The Automate To Timeline button quickly assembles the Storyboard onto the Timeline in one fell swoop, adding simple clip transitions that you can edit later. For beginners or those who hate to fuss, this is a beautiful thing. However, we had an alarming experience with this feature—after clicking the Automate button, audio clips didn't make it to the Timeline with their video counterparts. On the second attempt, we noticed a default checkmark next to Ignore Audio in the Automate To Timeline dialog box—grrrr...

Premiere 6.0 certainly doesn't skimp on the amount of eye candy you can layer onto clips. It now groups transitions into categories for easier execution, and it has enough video and audio effects to fix or enhance anything. If you're *really* looking to add dazzle, the Motion Settings window provides intuitive, though somewhat clunky, controls for animating your clips creatively.

Though the sticky faders can be a bit frustrating to use, the new Audio Mixer is definitely a plus, providing a more standard way of mixing dialogue, sound effects, and music. Its best feature is the audio automation, which allows you to record real-time panning movements and volume swells for a smooth mix.

Once you've got your edits in the can, you can export the entire project in a number of ways—by saving it as a desktop movie, compressing it for CD-ROM or Web delivery, or using one of the presets to create a streaming video, to name a few. Overall, Premiere 6.0 is a great package that adapts well to all skill levels, allowing any user to pick it up and grow with it.—Kris Fong



Beginners and pros alike will find the Storyboard feature an asset.

good news: Storyboard capability. Good-looking video effects. Adaptable for all skill levels.
bad news: Slow rendering. Some clunky controls.



Brother HL-1670N

hardware

Company: Brother

Contact: 800-276-7746, www.brother.com

Price: \$749 (street)

Requirements: Mac OS 8.5 or later, 50MB of free hard disk space

Over the last few years, a strange gap has developed in the world of printers. On one side of the divide are speedy, low-cost personal printers (either inkjet or laser) that lack high-end features like PostScript, but are usually more than capable of serving a single user on a single computer. On the other side are high-end printers like HP's LaserJet series, whose complex network interfaces (called *print servers*) let them cheerfully serve entire workgroups.

The Brother HL-1670N succeeds at filling in the gap between the two types of printers better than any we've seen to date. While the HL-1670N is by no means the perfect printer, it packs an impressive feature set into a small, surprisingly low-cost package.

In theory, you could use the HL-1670N as a simple USB printer—it ships with Mac drivers for this purpose and includes a built-in USB connection. Using the HL-1670N this way, though, would be something like using Photoshop as a JPEG viewer. The true strength of the HL-1670N lies in its outstanding capabilities as a network printer—it is capable of supporting

If you don't need to go wider than 8.5 inches, the HL-1670N will probably meet your needs.

just about every type of network printing we've ever heard of (LPR, AppleTalk, SMB, Novell, and Banyan-Vines, to name a few), along with four different print languages (PostScript III emulation, PCL, Epson-FX, and IBM ProPrinter-XL), and it can print resolutions up to 600 by 2,400 dpi. Better still, the HL-1670N acts as a Web server, which makes configuring it a simple matter of browsing to the printer and adjusting the settings.

Beyond the print server, the print engine itself is quite impressive. The printer ships with 16MB of RAM, expandable to 144MB (and if you work in a graphic-intensive environments, you'll almost certainly want to upgrade). A duplex unit comes built in, and two-sided printing works smoothly and well (we didn't encounter a single paper jam during several hundred pages of two-sided printing tests). As usual for network printers, the initial pages take a bit longer to print out than subsequent pages (for example, our first page of text at full quality took 18 seconds to print, with subsequent ones coming out every 4 seconds). A full-page photo at 600 by 600 dpi printed in 3 minutes, 21 seconds.



PHOTOGRAPH BY AARON LAUER

Unfortunately, the HL-1670N's print server is far from the most robust we've seen. Send a large enough image and you'll exhaust the printer's 16MB of RAM, causing the print job to fail. This isn't necessarily a major problem unless it crashes the HL-1670N, forcing you to restart the printer before it will reappear on the network. Needless to say, that's not the best behavior for a workgroup printer; at the very least, we'd like a reset button! Configuring the printer can also be tricky for the inexperienced—for example, you need to go to the printer's Web-based administration tool before you can tell it what AppleTalk Zone to join.

Nonetheless, the HL-1670N is a remarkable printer for a remarkably low price. For small to moderate workgroups, we haven't seen a printer we could recommend more highly.—ian Sammis

good news: Surprisingly pro-level printer for the price.

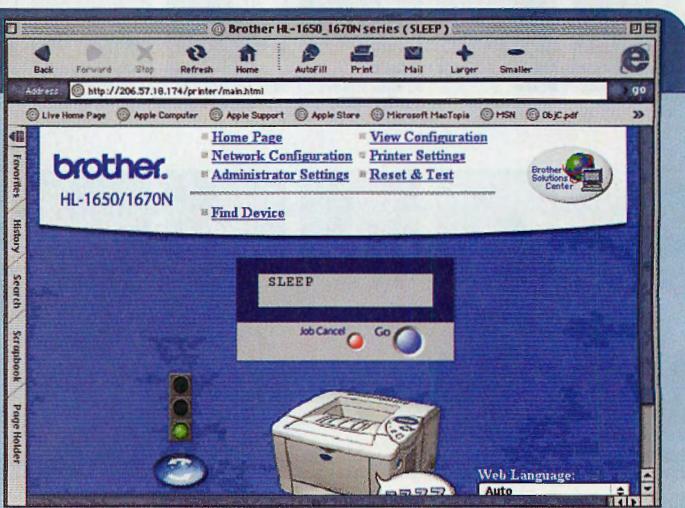
bad news: Errors sometimes require that you physically power down and restart the printer.



On the Web

If you haven't bought a workgroup printer with a built-in print server recently, the HL-1670N will pleasantly surprise you. Instead of requiring a special administration application, the HL-1670N simply sets up a Web server, where you can alter the printer's network settings, front panel display, and other settings. This is much easier than finding and running a special app—or worse, laboriously poking buttons to browse through an LCD-based menu system. The site is even password protected to keep that guy in the next cube who has a grudge against you from screwing up your printer.

Sheesh—now even laser printers are setting up their own Web sites.



Iomega USB Zip 250MB Drive

hardware

Company: Iomega

Contact: 888-446-6342 or 801-332-1000, www.iomega.com

Price: \$179.95 (SRP)

Requirements: PowerPC with built-in USB, Mac OS 8.5.1 or later, 32MB of RAM, 30MB of free hard disk space, 2X CD-ROM

The average consumer is more attracted to a thin, curvaceous body than to a boxier, heavyset model...when buying removable storage media. For that reason, Iomega's USB Zip 250MB Drive is alluring—but its price and compatibility compromises may discourage some.

The drive's portable design should suit work-at-home types just fine. Weighing only 9 ounces and measuring 1 inch thick, the translucent blue drive fits snugly into a large coat pocket.

Iomega is hoping you will join the 250 club with this 250MB drive.



PHOTOGRAPH BY AARON LAUER

Data transferred effortlessly on, off, and simultaneously on and off the included 250MB Zip disk—even when the device was working in the background. Reliability assured, we turned to our next criterion: speed.

Although this drive can read and write to the ubiquitous 100MB Zip disk, it's optimized for the newer 250MB U-shaped Zip disk. When we wrote a 93MB test file to the 250MB Zip disk, it took 2 minutes, 40 seconds on average—not bad. However, when we transferred the same data onto a 100MB Zip disk in the same drive, it took about four times as long.

If you share files with Zip users wedded to the 100MB media standard, you'll be stuck

writing slowly to their 100MB disks, since their Zip drives can't read your 250MB media. It took 2 minutes, 22 seconds on average to write the same test file to a 100MB disk on a 100MB drive.

At about twice the price of the 100MB Zip drive, Iomega's Zip 250MB USB Powered Drive will appeal only to those who need a larger media size but don't want to invest in a CD-RW burner or Jaz drive.—Narasu Rebbapragada

good news: Slim, USB-powered.
bad news: Noisy. Slow to write to 100MB Zip disks.



yeah, whatever

Griffin iMic Adapter

hardware

Company: Griffin Technology

Contact: 615-399-7000, www.griffintechnology.com

Price: \$35 (SRP)

Requirements: Mac with built-in USB, Mac OS 9.0.4 or later

The promise of the Griffin iMic Adapter is simple—with a single inexpensive device, Griffin swears to give you back the microphone port Apple omitted from many of its new designs. Griffin's device, despite a few minor oddities, combines low cost, solid underlying design, and ease of use to create the best audio-in solution for all but the highest-end Mac users.

Installing the iMic is trivial—plug it into a USB port and Apple's built-in audio driver takes over. Once your Mac has recognized the iMic, you'll see new audio input and output sources in the Sound control panel. Select a source, and you can immediately record sounds from anything plugged into

Thanks to Griffin, audio in is back in style.



PHOTOGRAPH BY AARON LAUER

the microphone port or listen to headphones or speakers plugged into the output port (depending upon which port you've selected). While the choice of Apple's drivers makes the iMic simple to configure and use, it has a downside: Although in principle the iMic can record and emit sounds at 24-bit resolution, Apple's audio manager limits it to just 16-bit resolution.

The iMic actually outdoes Apple—it's audio-input port can record from either line-level signals such as CD players and tape decks or mic-level signals such as most microphones. The implementation of this feature isn't as elegant as it might be—you have to flip a switch on the iMic's case (the

two input sources are identical, despite the fact that one is explicitly called *line level*). Worse, the switch is oriented so the iMic is set to audio in when flipped away from the microphone icon on the case!

Despite its minor flaws, the iMic is easily the best option we've seen for putting audio input back into the newest Macs. For higher-end uses you might turn elsewhere—but it's hard to argue with a price of just \$35.—Ian Sammis

good news: Simple, powerful, inexpensive sound module.
bad news: Switch defies logic. Some product capabilities go unfulfilled.



freakin' awesome!

Epson Stylus Photo 875DCS

hardware

Company: Epson

Contact: 800-463-7766 or 562-981-3840, www.epson.com

Price: \$349.95 (SRP)

Requirements: 233MHz PowerPC G3 or faster, Mac OS 8.5 or later, 64MB of RAM, 15MB of free hard drive space, Mac OS ROM 1.2 or later, one free USB port

Epson's latest professional-level inkjet printer is designed for a small office or graphic design department. From ease of use to exceptional image quality to excellent connectivity, the Stylus Photo 875DCS is a great choice for designers and artists who want a photo-quality inkjet.

Setting up the Stylus to work with your Mac is a snap. Just install the driver and plug the printer into a free USB port via a standard A-B USB cable (not included). Installing the two ink cartridges, one for black and one for color, is just as easy. Once set up and printing, the Stylus is delightfully quiet. According to the specifications from Epson, its sound level is just 38 decibels—even quieter than the reading room at your local library.

The Stylus promises and delivers excellent image quality. When it comes to printing text, the print driver lets you emphasize either quality or speed. An

8.5-by-11-inch page of plain black text took about 45 seconds to print in normal-quality mode and just under 2 minutes in photo-quality mode. Surprisingly, differences between the two print jobs were negligible. The Stylus also handles small text well. We printed a test page with Times-formatted text in sizes from 3 to 12 points. Even at normal quality, the 3-point text was quite readable, and everything over 7 points approached laser quality.

However, it's in printing artwork and photographs that the Stylus really shines. Printing a high-quality photo on glossy photo paper produces a surprisingly sharp, clear image even at the default resolution of 720 dpi. At 1,440 dpi, the quality is truly outstanding. In various test prints, flesh tones came out soft and clear. A picture of a person's hair was so detailed that we could pick out individual strands.

Of course, it takes longer to print an image at higher resolutions than at lower

ones. We took a 32-bit TIFF image measuring 6.2 by 4.1 inches and printed it at varying resolutions. At 1,440 dpi, the image took 3 minutes and 38 seconds, about twice as long as for the 720-dpi image. Pictures with a lot of flat color, such as ocean views, were clear and vibrant, especially when printed at 1,440 dpi. The color was uniform and evenly distributed, with no banding.

One feature designed for digital camera users is a slot for PCMCIA Type II (or PC) storage cards. With more high-end digital cameras storing images on PCMCIA cards instead of a floppy disk or an internal memory buffer, this is a welcome addition for those who want to bypass the computer completely. The Stylus imports images directly from the cards to your Mac via the included software. An adapter and bundled software are included for users of Memory Sticks (see "This Is a Stick-Up," left, for more information).

Its price tag and features make it clear that the Stylus was built for a professional environment. However, if you're an amateur photographer who likes to print in very high-quality mode or who owns equipment that relies on PCMCIA or Memory Stick storage, this printer might be just what you're looking for. Aside from Epson's unfortunate decision not to include a USB cable, the Stylus Photo 875DCS is a solid, professional-level printer at a very reasonable price.

—Mark D. Shuchat-Marx

This Is a Stick-Up

The Epson Stylus Photo 875DCS is the first Mac-compatible printer to include an adapter slot for Sony's Memory Sticks. Measuring 2 inches long by 1 inch wide and no thicker than a piece of chewing gum, the Memory Stick was originally designed for use in midrange digital cameras and camcorders, but has since expanded to hold digital audio (think MP3s) and even text files.

Sony wants the Memory Stick to eventually replace current standards of data storage and transport such as Zip disks. At a current storage limit of 64MB, the Memory Stick has a ways to go. Still, if Memory Sticks catch on, they will grow in capacity and drop in price, and a broader range of products will be compatible with the technology.



Stick it in
your ear...or
your printer, camera,
or camcorder.

good news: Excellent image quality. Quiet printing. Interfaces with PCMCIA cards and Memory Sticks.

bad news: USB cable not included.



PHOTOGRAPH BY AARON L. LAUER

HP PhotoSmart 315

hardware

Company: Hewlett-Packard

Contact: 800-752-0900 or 650-857-1501, www.hp.com/photosmart

Price: \$299 (SRP)

Requirements: 233MHz PowerPC or faster; Mac OS 8.6 or later; 64MB of RAM; 150MB of free hard disk space; 800 by 600, 16-bit color display; CD-ROM; USB port

Measured in price per megapixel, the HP PhotoSmart 315 is the best dollar value we can find for the amateur digital photographer. Whether that's the best criterion for evaluation depends on whether you're satisfied with taking good-quality casual snapshots and creating images for the Web. If your photography expertise runs deeper, this camera's limited options may frustrate you.

This 2.1-megapixel camera has a higher resolution than other Mac-compatible options in its price range, such as the 1.3-megapixel Olympus D-360L and the 1-megapixel Kodak CD215. The highest resolution, three-diamond mode gives you a 1,600-by-1,200-pixel image that you can print larger than 8 by 10 inches. Of course, only about eight of these highest-quality images fit on the included 8MB CompactFlash card.

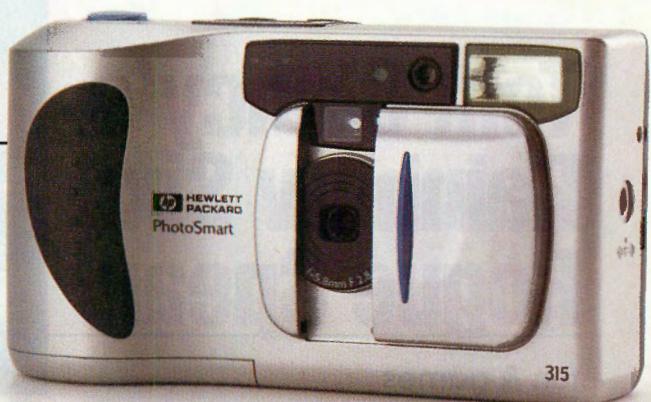
At 8 ounces without batteries, the PhotoSmart 315 fits comfortably in the hand. The controls are simple and easy to use. Sliding the lens cover to the left turns the camera on, to the right switches it off, and a five-way push controller provides easy access to most of the interface controls. The camera comes with the usual point-and-click conveniences like autofocus, 1.8-inch color LCD, flash, red-eye reduction, 2.5X digital

zoom, and a self-timer mode. The PhotoSmart 315's after-photo options (such as photo erase, rotate, and thumbnail view) are rudimentary but adequate. To download pictures to your Mac, you simply plug in a USB cable and drag images (in the form of JPEGs) from the camera's CompactFlash card to your Mac's hard drive. For wireless printing, you can take advantage of the camera's JetSend infrared technology, provided you have a printer that knows what to do with it.

Beginning photographers will find the limited camera settings more than adequate for casual snapshots of people, events, and scenery, although we recommend taking pictures of people in the highest-quality mode to avoid graininess and weird color casts. In fact, we don't recommend using the basic-quality mode for images you'll want to print out.

Once we tried to do anything more artistic than casual photographs, we found the automatic settings of the camera quite limiting. The autofocus couldn't handle close-up images, which turned out blurry. A 1- or 2-second delay between when we pressed the shutter and when the camera actually snapped the picture caused us to miss the action in our action shots. Even in

The HP PhotoSmart 315's simple controls will thrill the digital photography novice but frustrate anyone at a higher skill level.



PHOTOGRAPH BY AARON LAUER

Tips for Avoiding Battery Drain

1. Buy an AC adapter (about \$50) for downloading photos to your Mac.
2. Limit your use of the image LCD.
3. Turn off the Instant Review feature.
4. Upgrade your batteries to premium alkaline, photo lithium, or NiMH batteries.

superfine mode, skin tones sometimes took on a pinkish hue and landscape shots appeared slightly darker than they should have. Fortunately, the PhotoSmart 315 comes bundled with ArcSoft's PhotoMontage and PhotoImpression for basic image editing.

Our biggest gripe is the camera's battery life. The PhotoSmart 315 comes with four AA batteries, which will last about 10 hours if you make heavy use of the LCD and frequently download images to your Mac. Unfortunately, the PhotoSmart does not come with an AC adapter, so you'll have to buy one or at least get some rechargeable batteries if you want to save your sanity and the environment. Another minor gripe is that it lacks video out.

HP's PhotoSmart 315 is an inexpensive, high-quality digital camera that photo dandies will enjoy right out of the box. Whether they'll enjoy it a month later is questionable. If you're looking for a starter digital camera that will grow with your enthusiasm for the medium, you may want to check out the Olympus D-360L, which offers a bigger selection of manual controls.

—Narasu Rebbapragada

good news: Intuitive controls. Good picture quality for the price.

bad news: No video out. Drains batteries quickly. No AC adapter. Limited controls.



spiffy



The PhotoSmart 315's Autofocus feature rendered this monkey with razor-sharp clarity at a distance of 11 inches, but turned it into fuzzy mush at 6 inches.

Tom Clancy's Rainbow Six: Rogue Spear

fun & games

Company: MacSoft/Red Storm Entertainment
Contact: 800-229-2714, www.wizworks.com/macsoft
Price: \$49.99 (SRP)
Requirements: 300MHz G3 or faster, Mac OS 8.5 or later, 96MB of RAM, 84MB of free hard disk space, Rage Pro or better video card, CD-ROM

Rogue Spear is a shooter for strategy fans, but one that actually requires faster reflexes than your average game of Quake. Are these contradictions? Yes. Do they muddle the game a little? Yes. Is Rogue Spear still worth the effort it requires? Certainly, but not without some qualification. Rogue Spear is hard work no matter how you look at it.



Pick team members and equipment carefully. Fat ologenarians do not make valuable squad members.



Johnny-foreigner (the game is filled with questionable stereotypes) is a bloody good shot, old chap.

No, this isn't Mr. Rogers's neighborhood.

hostage situation to a nuke-in-a-suitcase deal. Luckily for us, they tend to use flash grenades, sniper rifles, and tear gas instead of diplomacy. The art of the game lies not only in the individual control of a squad member, but also in the planning and strategy behind a mission.

Before each game, you can choose from a preset plan or create your own by equipping squad members with weapons and setting waypoints and instructions for the artificial intelligence-controlled team to follow and execute. You can switch between members and preselected arsenals at any time—but it happens automatically in the event that the fella or lady you're controlling gets killed. Since all this action takes place in real time, keeping track of your strategy and reacting to sudden confrontation is sometimes stressful and challenging. Often you'll pop your head around a corner and someone you thought was a cowering civilian will suddenly open up on you with an AK-47.

The strategy aspect is very entertaining, and poor planning can result in the immediate massacre of your team. On the other hand, smart thinking can turn a seemingly impossible mission into a cakewalk. Action fans might be perturbed to learn they must activate simple actions, such as clambering over a small crate, by pressing a button. In multiplayer mode, the game works best on a LAN—you join Internet games manually by entering your opponent's (or buddy's) IP address, and to find these games, you need the online GameRanger game-location service. On a positive note, the game requires plenty of communication, and the GameRanger chat room provides a nice place to strategize.

Maybe the first clue that Rogue Spear has the odd technical issue is the fact that it requires more RAM than hard drive space.

The second clue is that it features two discs—one for installation and one for gameplay. This is likely an antipiracy measure, but any Mac gamer can testify that disk-swapping is an unmitigated pain in the rear. The game frequently accesses CD data, and considering that your first try at a new level can last as little as a few seconds, this gets old fast. Also, during texture and model loading the spinning logo icon halts, falsely indicating a freeze.



You start most missions right in the middle of your group—and yes, you can kill them by accident.

One nice bonus included on the disc is the Urban Operations mission pack, featuring new locales, scenarios, and missions, many superior to the standard set. This isn't too surprising, since this game first appeared on the PC around two years ago. That said, Rogue Spear isn't really showing its age—it has nice textures and complex environments, and is a welcome addition to a growing library of classy Mac shooters.

—Frank O'Connor

good news: Sharp, functional graphics. Interesting mix of strategy and arcade play. **bad news:** Program makes you switch back and forth between CDs during the game.



Sin Gold

fun & games

Company: MacPlay

Contact: 214-855-5955, www.macplay.com

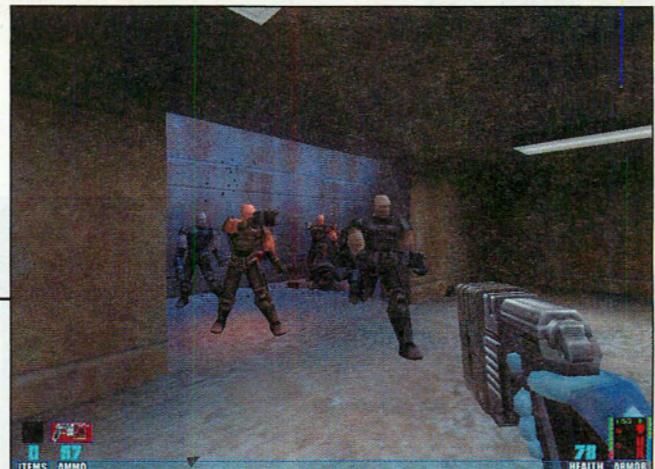
Price: \$19.99 (SRP)

Requirements: 233MHz G3 or faster, Mac OS 8.6 or later, 64MB of RAM, 600MB of free hard disk space, CD-ROM, OpenGL-compatible hardware acceleration card

The year is 2037. The streets of Freeport are filled with U4, a new drug that gets its users high but causes genetic mutations as a side effect. You are Colonel John Blade, a private cop with a terminal case of itchy trigger finger. While happily mowing down various evildoers, you learn that the drug U4 is connected with the mysterious SinTek Corporation and its seductive CEO, Elexis Sinclair.

That's the premise behind *Sin Gold*, a violent first-person action-shooter game from MacPlay. The game consists of the original

So many bad guys,
so little ammo.



Sin and an add-on, *Wages of Sin*, which expands gameplay. Based on the Quake II engine, *Sin* features smooth graphics rendering that works with your 3D hardware card, whether it's Voodoo, ATI Rage, or nVidia. But as we made our way through the game, we couldn't help feeling we'd seen it all before.

Sin is much like *Dark Forces* and *Shadow Warrior*—you kill bad guys, collect items, and use a variety of deadly weapons. The controls are fairly basic for first-person jockeys (you move via the keyboard and look around with the mouse), but newbies may find the combination of motor skills a bit challenging.

Parents should be aware that *Sin* carries a rating of *M* for *mature*. With a lot of bloody violence, some sex, and more than a few cuss words, *Sin* is not a game for young kids.

If you're new to the world of shoot-'em-up action games, *Sin* offers some good, bloodthirsty fun. But if you've played similar games in the past, *Sin* doesn't offer much that's new as far as the genre goes.

—Mark D. Shuchat-Marx

good news: Great graphics.

Exercises your inner maniac.

Low price.

bad news: Same old, same old.



spiffy

USB 2.0
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up to 480 Mbps



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GUH204



USB 2.0 & FireWire PCI Combo Card
GUF220



USB 2.0 CardBus Card
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 **LOGEAR**
KVM • FIREWIRE • USB

eZ-Motion

design & graphics

Company: Beatware

Contact: 650-556-7900, www.beatware.com

Price: \$99 (SRP)

Requirements: Power Mac, Mac OS 8.5 or later, QuickTime 4.0 or later, 32MB of RAM (64MB recommended), 20MB of free hard disk space, 800 by 600 or higher resolution, CD-ROM or DVD-ROM



Find
ez-Motion on
The Disc.

Many organizations that maintain Web sites have small staffs and even smaller budgets, and can't afford to hire a graphics expert. With eZ-Motion, Beatware tried to create a product capable of turning almost anyone into a veritable Walt Disney of animation talent. The result is remarkably uneven—parts of it work very well, but the overall package could use some fine-tuning.

Like many popular Web animation packages, eZ-Motion is based on the concept of keyframes—you define the location and appearance of objects at certain points in your animation, and the computer fills in all the remaining frames. eZ-Motion guides you through every step of the animation process. You begin by

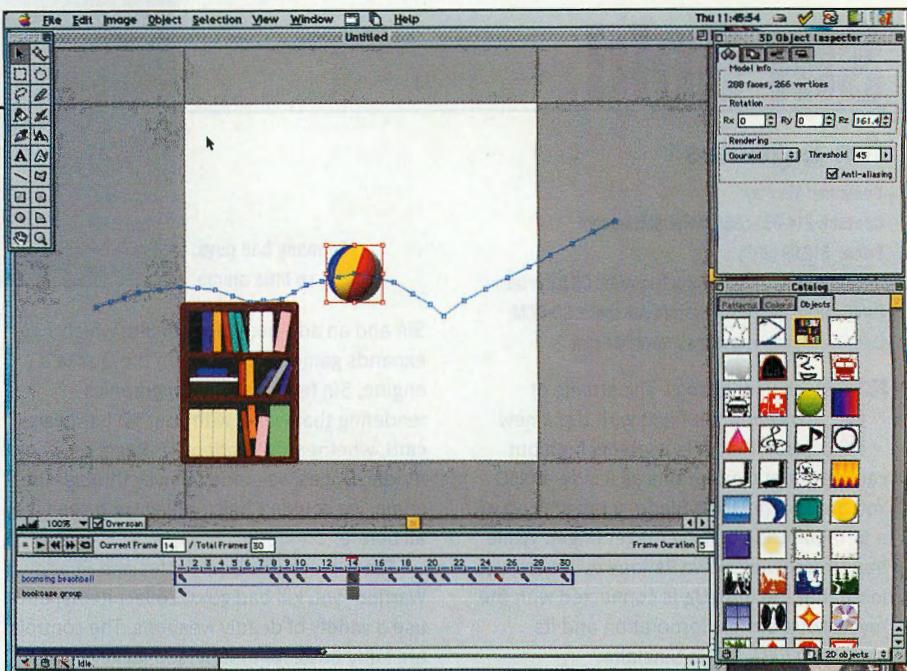
Expert Exports

Depending on the situation, eZ-Motion can export to a number of different animation file formats:

Animated GIF. By far the most versatile format, animated GIFs work in any browser and don't require any plug-ins. Be careful, though—file sizes can get pretty bloated.

Flash. Flash SWF files are based on EPS-style vector animation. These files are the best option for complex animations with lots of 3D, but they require a Flash plug-in for viewing.

RealVideo and QuickTime. These codecs are designed for video, not animation, and are more difficult to embed in a page than animated GIFs or Flash files. They're nice to have, but don't expect to use them much.



Follow the bouncing ball...right out of the frame.

selecting a template—eZ-Motion comes preconfigured with several Web elements (such as the 468 by 60 ad banners we all love to hate)—and then you either create or import the objects to animate. A running timeline at the bottom of the main window helps you keep track of where you are in the animation and creates keyframes every time you make a significant change. In this setup, creating simple animations is straightforward and easy, and eZ-Motion exports to an impressive list of Web-friendly animation formats, including animated GIF, RealVideo, and Flash.

Trying to dig deeper than simple import-keyframe-export operations can prove challenging. Several floating palettes contain poorly named object attributes; some of the basic controls (such as the text tool) also ignore standard Mac interface conventions. Expect a difficult learning curve; it will take some time to understand the interface, let alone get your work done.

If you're having problems, you'll find eZ-Motion's sparse documentation and lessons even more confusing; these utilize screenshots drawn exclusively from the Windows version. This would be fine if the Mac and Windows programs had identical interfaces, but they're different enough to keep you on your toes as you attempt to follow the tutorials. An included reference card details the Mac controls, and

Beatware's technical support is a cut above average; otherwise you're on your own.

eZ-Motion is fairly resource intensive. The program supports 3D text and objects through OpenGL; the latter eats up about 5MB of RAM in addition to the 64MB eZ-Motion requires, and that's before what you add for operating system requirements. The result is that you must have 128MB of RAM (real or virtual) to use this product at all, or you can expect Type 2 or Type 11 crashes. In contrast, Macromedia's far more powerful Flash requires half as much RAM.

If you think we're being awfully hard on eZ-Motion, blame it on the program's failure to live up to its overwhelming potential. It offers some powerful and useful tools for a reasonable price. If you're willing to put up with eZ-Motion's quirks, resource demands, and clunky interface, take this as a "Yeah, whatever" tempered by an eager thumbs-up for its future promise. Just don't expect to get much beyond simple animation unless you've already got some keyframe experience—or a whole lot of patience.—Rich Pizor

good news: Impressive import and export abilities. Includes many animated elements to get you started.

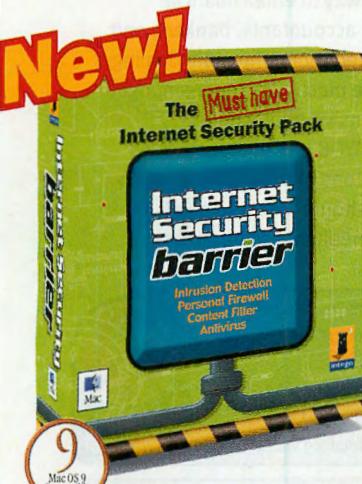
bad news: Unclear interface. RAM hog. Misleading system requirements. Documentation not Mac friendly.



An ounce of prevention goes a long way.



Internet Security Barrier. The must-have Internet Security Pack for your Mac.



Coming soon
to Mac OS X

Internet Security Barrier 1.0

Intego presents the complete Internet Security Pack for your Mac. Easy to install, easy to use, and always up-to-date, thanks to NetUpdate, which ensures automatic or manual updates over the Internet. Internet Security Barrier contains:

NetBarrier 2.0 NEW!

NetBarrier's personal firewall monitors incoming and outgoing data, blocking all vandal attacks and attempts to break into your Mac for full protection. A customized mode allows you to create your own defense rules. It analyzes data leaving your computer and prevents unauthorized exporting of private data. It helps maintain your privacy, giving you control over cookies, blocking ad banners, and blocking spam before you download it. It also helps cover your tracks, by refusing to give out certain personal data.

VirusBarrier 1.5 NEW!

VirusBarrier protects your Mac from all known viruses, including Word and Excel macro viruses. It checks files you receive by e-mail, download from the Internet or copy from CD-Roms or other media. Its turbo mode makes virus scanning lightning fast.

ContentBarrier 1.0 Now!

ContentBarrier sets up a protective wall around your computer. Its pre-defined categories let you choose what you don't want your children to see, and you can also create your own custom categories. Inappropriate web sites are blocked, shielding your children from things they are too young for. ContentBarrier blocks adult web sites, sites with subjects not fit for children, and even blocks chats when predatory language is used. It blocks all offensive content coming from the Internet.

Intego SKU: ISB1-SU
Ingram SKU: 559419

Licences available
5, 10, 20+

www.intego.com



Resellers

Apple Store
800-692-7753
www.apple.com

Buy.com
888-888-1030
www.buy.com

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www.cdw.com

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800-217-9153
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www.compusa.com

Computer Stores NW
541-754-8441
www.csnw.com

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www.computertown.com

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www.macsource.com

Dartek
888-432-7835
www.dartek.com

Datavision
888-888-2087
www.datavis.com

Developer Depot
800-622-3381
www.devdepot.com

J&R
800-221-8180
www.jandr.com

Mac Connection
888-213-0260
www.macconnection.com

MacMail
800-328-2790
www.macmail.com

MacWarehouse
800-397-8508
www.macwarehouse.com

MacZone
800-454-3686
www.maczone.com

Micro Center
800-207-3434
www.microcenter.com

Outpost.com
877-688-7678
www.outpost.com

MYOB AccountEdge

productivity

Company: MYOB

Contact: 800-322-6962, www.myob.com/us

Price: \$249 (SRP), \$99 (upgrade)

Requirements: PowerMac or equivalent, 32MB of RAM, 40MB of free hard drive space, Mac OS 8.6 or later

Look out, QuickBooks—there's a new kid on the block. If you're tired of Intuit's on-again, off-again relationship with the Mac, things are about to get better. MYOB has reentered the market with AccountEdge, the new and totally revamped version of MYOB Accounting. And AccountEdge is a real steal—this small-business accounting suite offers timesaving features usually found only in more expensive programs.

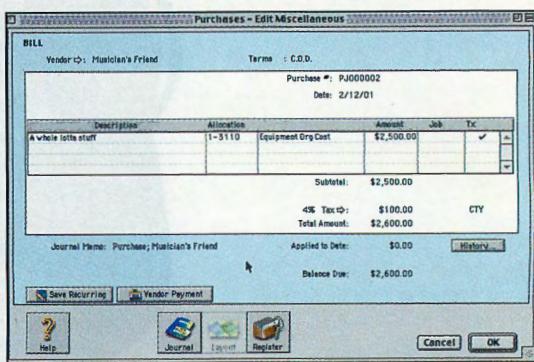
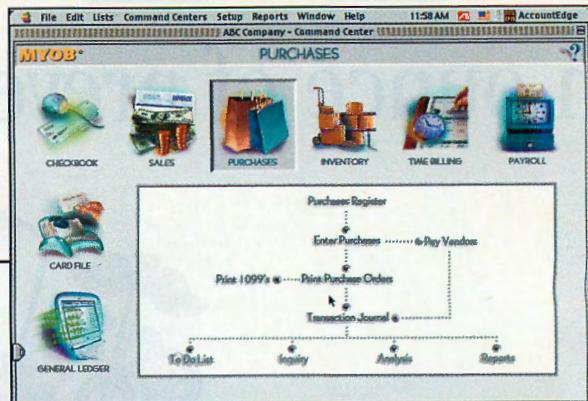
Right out of the box, AccountEdge's user-friendly nature asserted itself. We tested the single-user version, which installed easily and painlessly. A series of Assistants prompts you to either choose a business model from approximately 100 templates or create one of your own. One minor quibble—the pre-coded account numbers mean that users have to get used to a new set of numbers (no more naming the Entertainment account "007").

Once you've completed the initial setup, you can customize your template even more and truly realize AccountEdge's potential. Setting up default sales terms, tax rates, withholding rates, and other key options saves time and keystrokes later. It's well worth the effort to put in all your information up front, because the best part of the program is the way it's designed to capture data once, then use that data throughout without requiring you to rekey a thing. For example, you can easily turn a

purchase order sent to a vendor with default terms and pricing into a payable invoice, and then into a check, ready for printing. You can make modifications at each stage of the process (to make a partial payment, for example), or you can stick with the original options. Although these features are hardly revolutionary, it is great to find such flexibility in a package with a modest price tag.

AccountEdge's efficiency isn't limited to the purchasing process; similar mechanisms exist on the receivables side as well. The program contains an integrated time-tracking application (for professionals who bill hourly), allowing you to track your time according to activities, create an invoice with one click, and then later apply payments to that invoice with another click. For merchants, AccountEdge contains a robust inventory management system that tracks current product levels and notifies you when reorders are necessary.

With all this user friendliness, we might have expected AccountEdge to skimp on the hard-core accounting features. Not so—the General Ledger module offers more timesaving opportunities. For example, you can automate recurring journal entries (such as depreciation or insurance expenses) with a click. And at month's end, you can easily generate a host of



You can keep the initial data entered in the purchase order or modify it as necessary later on.

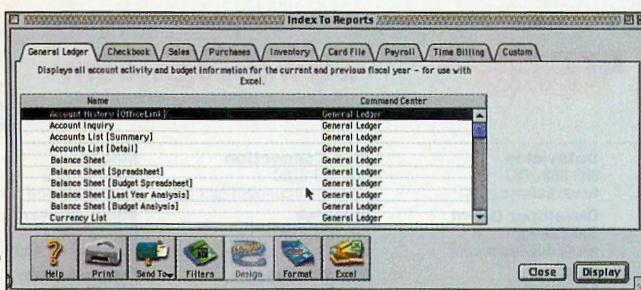
preprogrammed reports and either modify them to suit your needs or export them directly to Microsoft Excel for further manipulation. Aside from being a great tool for ad-hoc reporting, this is also a quick and cost-effective way to email financial statements to accountants, bankers, and others who need them—no more dealing with unreliable machines, toner-smudged faxes, or expensive photocopies.

All in all, MYOB has put together a package with tons of bang-for-your-buck features that should meet the needs of any small-to-medium-size business.

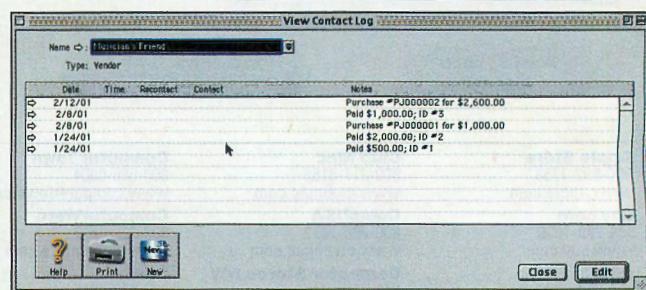
—Ron Gilcreast

good news: Intuitive and easy to use. Customizable enough to suit almost any type of business.

bad news: Slight degree of inflexibility. A bit intimidating for those who lack an accounting background.



You can generate an impressive array of preprogrammed reports and either use them as they are or export them to Excel for changes.



MYOB AccountEdge lets you set the Contact Log to track all transactions and actions for a given contact.

Aladdin Transporter

utilities

Company: Aladdin Systems

Contact: 800-480-4011 or 408-761-6200,
www.aladdinsys.com

Price: \$149.99 (SRP)

Requirements: PowerPC or faster, Mac OS 8.6 or later, 8MB of RAM, 22MB of free hard disk space

The most confusing aspect of Aladdin Transporter is figuring out what it is.

The product's tag line is "Create personalized communications solutions." That didn't help us much. After some probing, we found that Aladdin Transporter promotes itself as a program delivering "communications solutions" to "anyone." In actuality, it's really just a simple macro utility with a hefty price tag. That said, it does offer an easy-to-use interface with customizable drop-down boxes of single-click actions, such as Stuff And Send E-Mail.

Automate tasks with self-contained applets by building them in Aladdin Transporter's easy-to-use drag-and-drop interface.

Transporter is programmed to perform 26 different actions, mostly related to sending files over the Internet, such as stuffing a folder, making an alias, or uploading a file. You can create combinations of those 26 tasks, which Transporter then sorts into the Files, Internet, or Actions tabs, and you can save your lists as self-contained applets. The Files tab contains tasks like Encode, Make Alias, and Rename. The Internet tab features the obvious FTP Upload, Open URL, and Send Email. The Actions tab's list of goodies includes Ask For Password, Display Alert, and Play Sound.

Highlight the specific tasks you want to automate, then drag and drop them into a Transporter document, and you can create an applet that performs a fairly complex set of

tasks. If you're easy going or just plain lazy, Transporter offers five wizards that cover the basics: compressing, uploading, and emailing files.

For all of Transporter's versatility and ease of use, it's hard to imagine many people will get their \$150 out of it. You can save time by using Transporter to automate, say, sending bulk email—but free AppleScripts, cheap utilities, and programs like CE Software's QuicKeys can perform most of those tasks at a better price.

—Rick Sanchez

good news: Automates many basic tasks. Easy-to-use interface.

bad news: Pricey for what you get.



FastTrak Schedule 7

productivity

Company: AEC Software

Contact: 800-346-9413 or 703-450-1980, www.aecsoft.com

Price: \$299 (SRP)

Requirements: PowerPC 601 or higher, Mac OS 8.6 or later, 4MB of RAM, 30MB of free hard disk space, 2X CD-ROM

If you need to schedule a really big event like the apocalypse, the latest version of AEC Software's FastTrak Schedule can make organizing the end of the world less of a chore. (How much does a wall of fire cost, anyway?)

FastTrak Schedule's greatest strength and weakness is its power. FastTrak can perform so many tasks that all the buttons and palettes providing one-click feature access may daunt first-time users who are just trying to figure out how to make dependent actions. Those who persevere will discover that FastTrak offers everything from traditional GANTT charts to calendar views, nested and dependent tasks, and the ability to create just about any kind of

Plan your projects—
down to the hours
spent planning—
with AEC Software's
latest version of
FastTrak Schedule.

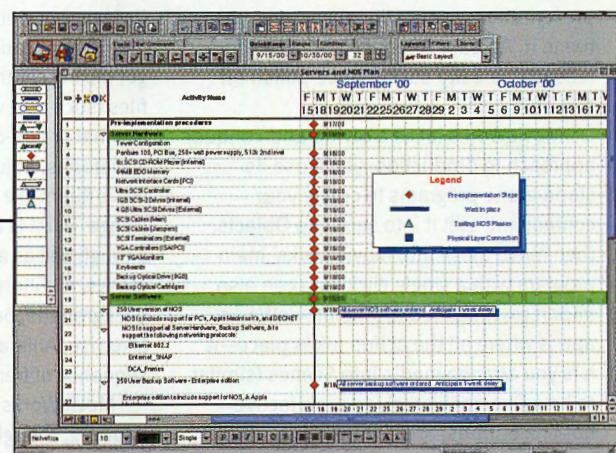


chart or graph. It also performs calculations for expense and time tracking.

Version 7's user interface surpasses 6's by leaps and bounds, although it does have a bit of a Windows feel. If Schedule's predefined palettes don't meet your needs, you can mix and match palette tabs until the layout and button access satisfy you.

One of the most important features for users who spend lots of time working with other project managers is the ability to import Microsoft Project files via a Project wizard. No matter what agency or company you work with, you can share your project files with just about anyone. We imported even the most

complex Project files without a problem. Although Schedule supports HTML export, it doesn't do a very good job unless you have a very simple project.

AEC Software has done an excellent job of making FastTrak Schedule 7 more robust than previous versions. This is a great solution for anyone who needs to deliver every aspect of a project—plague, famine, and all the rest—right on time.—Rick Sanchez

good news: New calendar view.
Ability to import Microsoft Project files.
bad news: Difficult learning curve.
Poor HTML export.



MovieWorks Deluxe

multimedia

Company: Interactive Solutions

Contact: 800-668-4353, www.movieworks.com

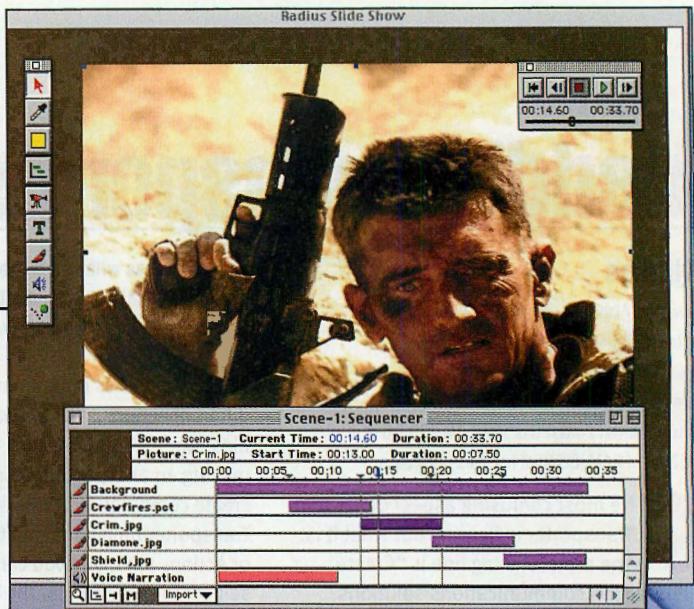
Price: \$149 (SRP)

Requirements: Power Macintosh, Mac OS 8.6 or later, 16MB of RAM, 30MB of free hard disk space, CD or DVD-ROM drive, QuickTime 4.1 or later (included)

AfterEffects, Final Cut, Cleaner, Director—these are the titans of Mac multimedia production, but unless you're a working pro, they're hopelessly complex and way beyond the budget of mere Mac mortals. Enter MovieWorks Deluxe, a suite of five applications (Video, Sound, Animation, Paint, and MovieWorks) that lets you conjure up all sorts of multimedia projects—videos, photo albums, business presentations, educational content, you name it. An easy interface and a beyond-reasonable \$149 sticker price polish off this little gem.

MovieWorks takes a divide-and-conquer approach to production: you'll use its stand-alone programs to create your content and edit it into separate Objects, then move these into MovieWorks' main program with a single click (you can also import existing media). The MovieWorks app is where all the action takes place—it lets you arrange media into Scenes (similar to how Director works), add interactive hot-link buttons, titles, transitions, and animation effects such as paths and scaling. MovieWorks' Sequencer window

Assemble and preview your media in the main MovieWorks program, then use the Sequencer window to set each media clip's start time, duration, and layer order.



plays a big role here—it's where you'll orchestrate each Object's starting point and duration. Once you have things tweaked just right, MovieWorks can export your projects back to QuickTime files (you can customize settings for Web or CD bandwidth) or an attached video source such as a DV camera.

MovieWorks does amazing things with its lean, but well-chosen feature set. In the Sound application, for instance, you don't get mixing controls, but you can record AIF files (such as a voice narration) from an internal or add-on mike, cut and paste waveforms, adjust volume levels, and apply basic filters like Echo, Reverse, Fade, and Flange. Paint is also pretty utilitarian—a tough sell as a photo editor (no layers, no masks, no filters)—but it's fine for making backgrounds, buttons, and basic 2D art. Likewise, Animator lets you create a sequence of frames and set its play speed.

MovieWorks is a solid substitute for iMovie 2, though not as easy to use or as flexible. The aptly named Video application captures video from a DV camera or analog source (FireWire or an analog capture card required). To edit clips, just cut and paste within a standard QuickTime window. You can also add standard QuickTime effects (Sharpen, Blur, Color Tint, Film Noise, and so forth), then use MovieWorks' Sequencer to arrange the clips in time, add titles, and so on.

Add interactivity by turning any object (say, a button or picture) into a hot link to another Scene. It's all you need to make a table of contents and other navigation tools such as forward, back, home, and quit.

| | |
|---|--|
| Button Attributes | |
| Name: <input type="text" value="Quit Button"/> | |
| Duration: 00:01.00 <input type="button" value="seconds"/> | |
| <input type="checkbox"/> Sound Effect | <input type="checkbox"/> Extend To End |
| Graphics Mode: <input type="button" value="Copy"/> | |
| Type: | |
| <input checked="" type="radio"/> Normal <input type="radio"/> Play <input type="radio"/> Rewind <input type="radio"/> Stop <input type="radio"/> Quit | |
| Depressed Effect: | |
| <input type="radio"/> Invert <input checked="" type="radio"/> Outline <input type="radio"/> Custom <input type="radio"/> None | |
| <input type="button" value="Revert"/> | <input type="button" value="Cancel"/> |
| <input type="button" value="OK"/> | |

While the Sequencer is a bit cumbersome compared to iMovie's simple tracks, it does the job.

Beyond this meat-and-potatoes fare, MovieWorks packs some surprising power features of its own. Let's say you're creating a photo album with 200 clips. Step one: Don't import this deluge via the File menu! Just drag your whole folder from the desktop to the open application, and MovieWorks loads each clip into the Sequencer. Next, click the Auto Sequence button and watch MovieWorks stagger the clips in time, sparing you all that dragging. Want to add cross-dissolves (or wipes, fades, and so on) to all those pics? No problem—you can apply and edit transitions in one fell swoop, batch style. Another tool lets you place markers in time—say, cues in a voice narration you've recorded—and use Auto Sequence to line up the images with the cues. Wow.

Just to prove our objectivity, we'll harp on MovieWorks' few flaws for a moment: it crashed several times, it lacks multiple undos, its online help needs expanding (why no balloons?), and we found some menus confusing—various compression settings show up in four different places. But these annoyances don't detract from the program's overall cool factor. If you want to harness your Mac's multimedia muscle, MovieWorks delivers—quickly, easily, and cheaply.—Helmut Kobler

good news: Makes quick, easy work of many multimedia projects.
Affordable. Low system requirements.
bad news: Anemic online help. No multiple undos.



Contour Shuttle Pro

hardware

Company: Contour Design

Contact: 800-462-6678 or 603-893-4556,
www.contourdesign.com

Price: \$99.95 (SRP)

Requirements: PowerPC, Mac OS 8.6 or later, 64MB of RAM, 1MB of free hard disk space, USB port

Arrow keys just can't compare to a good jog-shuttle wheel when it comes to editing time-based media like video or audio. Contour Design built the Shuttle Pro with this task in mind. The Shuttle Pro features 13 user-definable buttons, a single-frame jog wheel, and a proportional shuttle wheel in a single USB device.

Setting up the Shuttle Pro was painless: Install the control panel, restart, and select your settings. Contour Design's driver comes with presets for Apple's FinalCut Pro and iMovie, as well as Adobe Premiere 5.1. The lack of presets for popular tools such as Media 100 or BIAS Peak shouldn't discourage

Take control of your video editor with Contour Design's easy-to-use Shuttle Pro jog-shuttle wheel.

users from considering the Shuttle Pro, however. The control panel's user interface makes the device easy to configure in just about any application. A User Action menu lists every possible function of the Shuttle Pro—from moving the shuttle 30 percent to the right to button responses. The shuttle wheel's customization is excellent, allowing you to set it up from half speed all the way to eight times normal speed (if your application supports that range).

Unless users find a jog-shuttle wheel comfortable to handle, it's not much use, no matter how well it works in other respects. Contour Design saw to this basic requirement. Whether you're a righty or a lefty, whether you have small or large hands, the Shuttle Pro's



PHOTOGRAPH BY AARON LAUER

flat design fits snugly under your hand. After several hours of editing, we felt less fatigue in our fingers than we'd experienced using a mouse-and-keyboard combination. Our only complaint is that the USB cable is very short, so unless you plug the device into your keyboard, you'll need a hub or extension cord.

A jog-shuttle wheel isn't a prerequisite for video and audio editing, but it can make the job easier. Contour Design's Shuttle Pro is the best controller under \$100 we've ever used, and it's a great choice for video editors.—Rick Sanchez

good news: Excellent drivers. Fully customizable. Easy to use.
bad news: USB cord is too short.



VST Bus-Powered FireWire CD-RW

hardware

Company: VST Technologies

Contact: 978-263-9700, www.vsttech.com

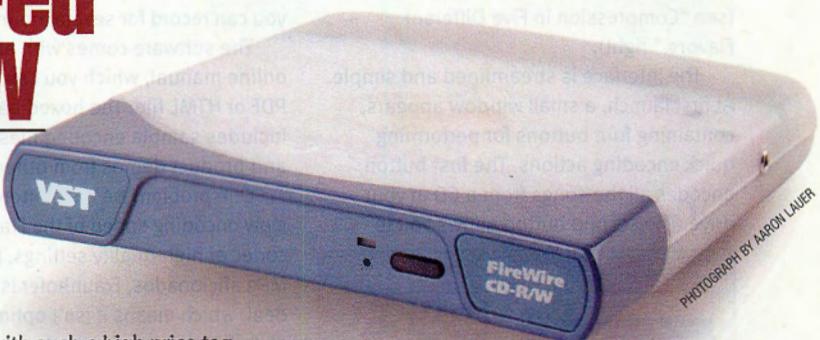
Price: \$399.95 (MSRP)

Requirements: Any Mac with a FireWire port

As more and more companies join the CD-burning revolution, a deluge of desktop CD burners has flooded the market. Detecting a niche that needed filling, VST Technologies created a portable FireWire CD-RW drive with the road warrior in mind. VST's burner may not be the fastest or cheapest CD-RW drive around, but for the user who demands true portability, this drive is as good as it gets.

The VST FireWire CD-RW burner is a 4X CD record, 4X record/write, and 20X read package. With the current crop of high-end burners topping out at 16X, VST's numbers are definitely lower than one would expect

Burn, baby, burn!
This isn't your daddy's CD-RW drive.



PHOTOGRAPH BY AARON LAUER

for a burner with such a high price tag. While this drive's slow burning speed might give a potential buyer pause, it does have a couple of extra features that may justify the additional cost.

The VST drive is lightweight and compact, measuring only 5.5 by 7 by 1 inches and weighing a mere 16 ounces. Not only will it fit comfortably in a laptop bag, but it's also powered by the FireWire bus itself, which means it doesn't require any external power supply. The mobile user requires equipment that is portable, lightweight, and easy to set up, and the VST fits this profile perfectly.

These days buyers have lots of choices when it comes to CD-RW drives, and because of its speed limitations and high cost, we can't recommend the VST device to desktop users. However, if you are constantly on the run and want an efficient, portable CD-RW, then the VST Bus-Powered FireWire CD-RW may be just what you need.—Buz Zoller

good news: Lightweight and compact. Doesn't require an external power supply. **bad news:** Only burns at 4X. Expensive.



N2MP3 Professional 2.0

audio

Company: Proteron

Contact: 402-932-3894, www.proteron.com

Price: \$59.95 boxed, \$19.95 upgrade from version 1.x, \$29.95 upgrade from MPegger

Requirements: PowerPC Mac, Mac OS 8.5 or later optimized for G4

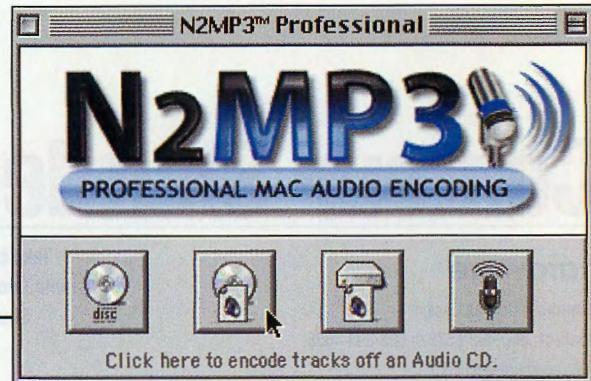
Why would anyone want to pay \$60 for an MP3-encoding program? There's one primary reason: to obtain Proteron's hallmark, the highest-quality MP3 encoding possible on a Macintosh. N2MP3 targets the professional artist or producer, though it is as easy to use as other MP3 encoders, if not easier.

MP3-encoded audio quality is largely determined by the codec (compressor/decompressor). Unlike many MP3 encoding packages, such as iTunes or SoundJam MP Plus, N2MP3 Pro comes with five different codecs, or methods of encoding music for your hard drive: Fraunhofer, LAME, MPegger, MP2, and the new Ogg Vorbis (see "Compression in Five Different Flavors," right).

The interface is streamlined and simple. At first launch, a small window appears, containing four buttons for performing quick encoding actions. The first button encodes all the songs from a CD in your drive. The second button allows you to



Four buttons you may never even use—that's how simple it is.



encode certain tracks from a CD. The third button encodes audio files such as AIFF or WAV to MP3. Clicking the fourth button brings up a Live Recording option, which lets you record live audio, such as a microphone feed (as opposed to preexisting audio), then save the encoded audio to the hard drive in real time. You can pretty much do everything (aside from the fourth option) by dragging and dropping your audio tracks, CD files, and audio files onto the N2MP3 window. This opens up a new window with encoding options, where you can either choose from factory presets or tailor the settings to your own preferred specifications.

The Live Recording option, a new feature for N2MP3 Pro, is great for recording interviews, conferences, or any kind of long-format audio without interruption. For PowerBook users, this is an especially great feature. With the proper encoder settings, you can record for several hours.

The software comes with an excellent online manual, which you can view as a PDF or HTML file. The boxed package also includes sample encoded files from artists and product demos from other companies.

One problem we encountered was the slow encoding speed of the Fraunhofer codec at high-quality settings. Praised by MP3 aficionados, Fraunhofer is the original deal, which means it isn't optimized for speed. Unless you're the type who demands the accuracy of Fraunhofer encoding, you'll prefer other options like MPegger or LAME, which work much faster.

N2MP3 can benefit both consumer and professional users—especially with its simple interface—but the nonprofessional audio enthusiast may find the \$59.95 price tag a little high.—Andrew Tokuda

good news: Choice of codecs. Simple to use. High-quality compression. Comprehensive manual. **bad news:** Priced slightly high for most consumers.



Compression in Five Different Flavors

Fraunhofer

Fraunhofer is the original MPEG compression algorithm on which all other codecs are based. This is the licensed codec other encoders optimize with their own code, usually to speed up encoding time. Fraunhofer is slow, but it's the originator of the ISO-MPEG Audio Layer-3 algorithm, or MP3 (a format specified by the International Standards Organization as a digital audio standard).

LAME

LAME stands for "LAME Ain't an MP3 Encoder." That means LAME cannot produce MP3 files unless used in conjunction with the original ISO source. It is a license-free, open-source project, with the goal of using incremental improvements in psychoacoustics, noise shaping, and MP3 speed as the basis of a patent-free audio compression codec.

MPegger

This encoder, formerly called Mpecker, was terminated due to licensing issues with the Thomson Multimedia Group, the Fraunhofer codec's patent holder. Proteron acquired and renamed Mpecker.

MP2 Encoder

Compared to MP3, the MPEG Layer-2 format has a better sound quality at higher bit rates.

Ogg Vorbis (.ogg)

This isn't an MP3 encoder—it's an alternative encoder that's open source and royalty free, unlike the Fraunhofer codec. At the time of this writing, you can only play this format with Audion2 from Panic (www.panic.com) and Unsanity Echo (www.unsanity.com), both included with the N2MP3 program as demos.

Norton Internet Security

utilities

Company: Symantec

Contact: 800-441-7234 or 541-334-6054,

www.symantec.com

Price: \$99 (SRP)

Requirements: Power Mac, Mac OS 8.1 or later, 24MB of RAM, 12MB of free hard disk space, CD-ROM

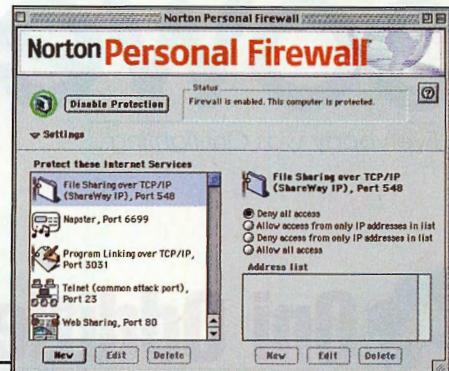
If you're worried about network attacks or virus threats, Norton Internet Security for the Mac will keep you safe from things that go bump on the Net. This package bundles Norton Personal Firewall 1.0, Norton Antivirus 6.0, and Aladdin Systems' iClean 3.5.

Personal Firewall sits between you and the Internet, offering protection from prying eyes and malicious attacks. A before-and-after look at Symantec's Web-based Security Check

confirmed that installing Personal Firewall closed previously exposed ports on our Mac, and the software safely denied and logged the attacks we staged with a number of nasty utilities scoured from dark corners of the Net. The interface is typically Norton—clean, with large icons—and you can easily customize the settings to allow access to specific services, such as Timbuktu or FileMaker Pro. The provided drop-down list of applications feels sparse, but the manual covers settings for any Internet app.

Norton AntiVirus has long been a stalwart companion of any Mac owner concerned with keeping files free of infection, and although this update isn't massively different from 5.0, AntiVirus is still just what the doctor ordered. Version 7.0 will scan and repair email

Setting up the firewall so you can use your normal array of network applications is easy.



attachments and check compressed archives before you expand them, and it will work on your OS X partition.

Aladdin's iClean rounds out the package, providing one-click removal of Web site cookies and other browser junk. The first time we ran it, the program saved us over 200MB of disk space previously claimed by abandoned browser-cache files.

If you're a Mac owner with an ADSL or cable-modem connection, Norton Internet Security is a simple, effective way to protect yourself against the hazards of the Net.—Jaap O. Tuinman



spiffy

good news: Nice price for a solid software security suite.

bad news: Firewall is strictly no-frills.

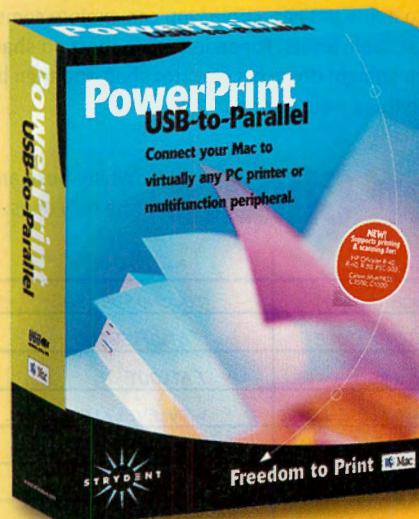
Can't Print

Having trouble printing from your Mac to a PC printer?



The Solution...

Print from your Mac to over 1600 popular PC printers



PowerPrint

For more information or to purchase PowerPrint:
Call 888-428-2634 or visit www.strydent.com/powerprint



powerplay

Everybody was Oni-fighting...



Oni Oddities

When Oni Ends, a Way to Keep the Fun Alive

Without any multiplayer option, the end of Oni is truly the end. Once you defeat Muro, you've pretty much exhausted what Oni offers. So how do you dredge a bit more life out of the game? You cheat, of course.

Once you've won Oni, you can use the game's cheat codes—and while some are nothing more than you'd expect from any third-person shooter, others let you explore forbidden reaches of some levels.

To enter a cheat code, just press F1, then type the code. When you enter the code correctly, the game should tell you that you've enabled the cheat. Here are some of our favorites.—IS

The Cheat: Change Characters

The Code: *shapeshifter*

What It Does: Lets you change which character you control

Once you turn on Change Characters, pressing F8 transforms you from Konoko into each of the current level's other characters in turn. The only problem is that you take on that character's abilities as well—play a lowly civilian (or, heaven help you, Shinatama), and you won't be quite the unstoppable warrior Konoko is.

The Cheat: Invincibility

The Code: *liveforever*

What It Does: Keeps Konoko from harm

With Konoko made indestructible, you can explore some otherwise totally unreachable levels. For an indescribably odd shadow-play, follow Griffin straight down his elevator shaft and then behave as though everything were normal.

The Cheat: Last Man Standing Mode

The Code: *reservoirdogs*

What It Does: Makes everyone fight everyone

If all those cooperating opponents just don't leave you with that satisfying Hong Kong-cinema feeling, a quick dose of the reservoirdogs cheat will turn Oni into a massive, multipart free-for-all.

Watch out, though—we've seen at least one cut scene become interminable when an opponent decided to mix it up with his buddies instead of going through a door as he was meant to.

The Cheat: Glass Furniture

The Code: *glassworld*

What It Does: Makes all items except walls or floors shatter under weapon fire

If you can't satisfy your appetite for destruction by blasting opponents, glassworld lets you nuke the equipment, boxes, and aircraft that might otherwise get in your way. In some levels, it even lets you explore parts of the level you couldn't otherwise reach (or, if you're not careful, fling yourself off the edge of the world).

Other Cheats

While those are the most entertaining cheats, they're hardly the only ones. Here are some other codes worth entering.

| THE CHEAT | THE CODE | WHAT IT DOES |
|--------------------------|--------------------|--|
| OMNIPOTENCE | TOUCHOFDEATH | KONOKO KILLS ANY OPPONENT WITH ONE PUNCH, KICK, OR THROW |
| FISTS OF LEGEND MODE | FISTSOFLEGEND | OPPONENTS FLY BACKWARD DRAMATICALLY WHEN HIT |
| FAT LOOT | FATLOOT | FULL HEALTH AND AMMO (OF BOTH TYPES) |
| INSTANTLY WIN/LOSE LEVEL | WINLEVEL/LOSELEVEL | JUST WHAT IT SOUNDS LIKE |
| BIG HEAD MODE | BIGHEAD | ALL CHARACTERS GET LUDICROUSLY OVERSIZE HEADS |
| MINI MODE | MINIME | KONOKO BECOMES TINY |
| SUPER AMMO MODE | SUPERAMMO | GUNS DON'T CONSUME AMMO AS THEY FIRE |
| GATLING GUNS MODE | ROUGHJUSTICE | GUNS FIRE MORE QUICKLY |
| DAODON POWER MODE | CHENILLE | KONOKO IS ALWAYS IN OVERPOWER MODE |
| GODZILLA MODE | BEHEMOTH | KONOKO BECOMES MUCH LARGER THAN USUAL |
| PHASE CLOAK | MOONSHADOW | KONOKO GETS A PERMANENT PHASE CLOAK |
| SLOW MOTION MODE | CAROUSEL | ALL CHARACTERS MOVE IN SLOW MOTION |

I can do all that?
Who knew?



Inside id

An Interview with Graeme Devine

Recently we stopped by id Software and caught the distinct scent of midnight oil and the sound of keyboards clicking at high speed. To find out what was happening, we checked in with Graeme Devine, a game designer and programmer at id Software whose public musings (captured for posterity on www.webdog.org) reek of Mac addiction. Here's what Graeme had to say.—RA

On Quake III: Arena Optimizations

"There are three major changes as far as the Mac version of Quake III: Arena goes. First, we've made the code more PPC friendly. Second, a bug in the sound code was stealing more of the system resources than it needed [so we fixed that]. And last, we've optimized the Virtual Machines that Quake III: Arena runs upon and how the compiling is done. All of this in conjunction produces a nice boost in the fps department (around 10 to 20 fps, depending upon your machine). That's without any AltiVec code optimization, which we are working on as well." The patch should be ready by late March.

Hunter, Seeker, Sprayer, Splasher, Shooter



Where's Buffy When You Need Her?

In *Monster Hunter*, a \$20 game from the folks at MonkeyByte Development (www.monkeybyte.com), you have the grisly job of disposing with level upon level of monsters until you finally reach the powerful boss monsters. Each creature has different strengths and weaknesses—you can dispose of ghosts with holy water, for example, but if you use the same technique on man-eating plant monsters you'll only increase their power. With over 100 levels of gameplay and the ability to make your own levels, *Monster Hunter* won't get old anytime soon.—RA

Wow...that's a lot of monsters.



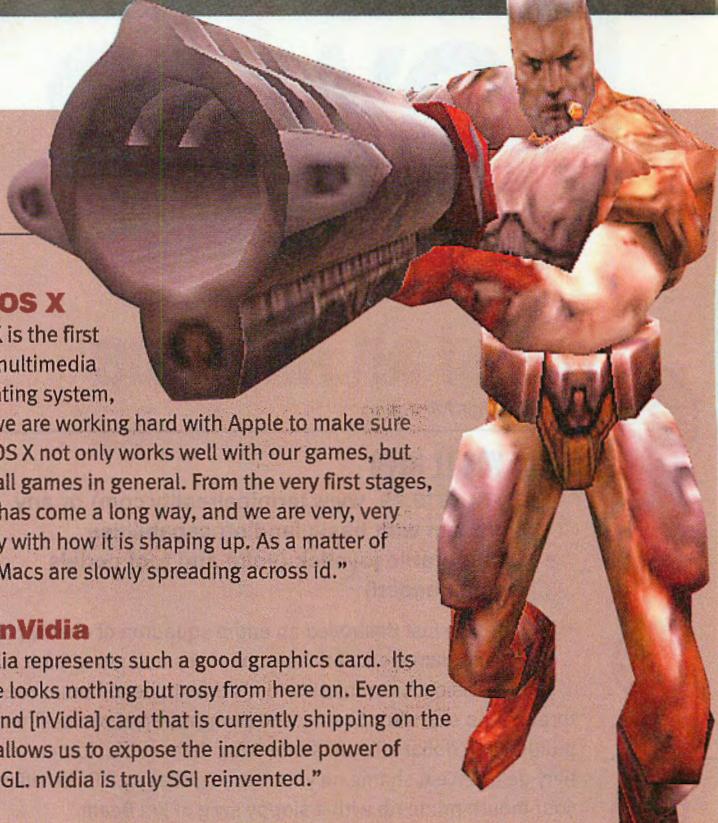
This guy should be killing you a bit more smoothly soon.

On OS X

"OS X is the first true multimedia operating system, and we are working hard with Apple to make sure that OS X not only works well with our games, but with all games in general. From the very first stages, OS X has come a long way, and we are very, very happy with how it is shaping up. As a matter of fact, Macs are slowly spreading across id."

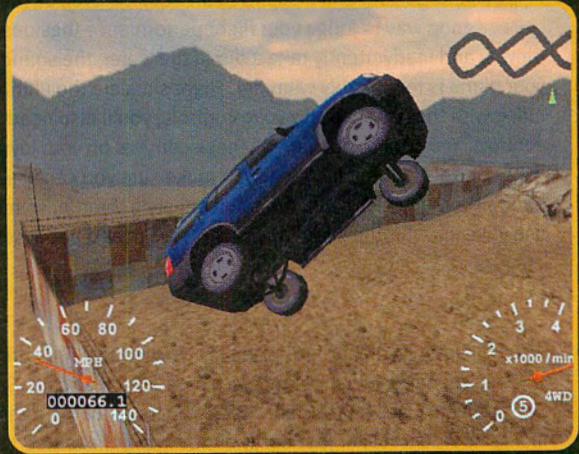
On nVidia

"nVidia represents such a good graphics card. Its future looks nothing but rosy from here on. Even the low-end [nVidia] card that is currently shipping on the Mac allows us to expose the incredible power of OpenGL. nVidia is truly SGI reinvented."



Screenshot of the Month

If you think you can do better (c'mon, admit it—you know that's what you're thinking!), send your best screens to letters@macaddict.com with the subject line "Screenshot of the Month."



Artist's Statement

While trying out the 4x4 EVO Demo from The Disc in February, I discovered the area outside the Savage Wasteland track. Instead of returning to the track by going through the game, I decided to fly back in.—Richard Reyes

how to

Time to quit those 53-point landings.

Land an Airplane

by Jenifer Morgan



TOUGH



This stuff's for
the pros.



It'll take some
effort, but you
can do it.



The fundamentals,
if you will.



ILLUSTRATION BY JOHN KACHIK

WHAT YOU'LL NEED

- Fly2K (\$19.99, www.terminalreality.com) or any flight sim with basic landing capabilities
- Configurable joystick (yoke and foot pedals recommended)

You've just destroyed an entire squadron of enemy planes and damaged a fair amount of sea and ground forces. Your mission is complete and it's time to head home. You race through the sky, triumphant...and promptly eject yourself from your multimillion dollar aircraft, sentencing its beautiful form to a violent, fiery death. Well, shame on you. You might as well finish off melt-in-your-mouth prime rib with a sloppy swig of Jim Beam.

Landing an airplane is the crème brûlée of flying, the final stroke of brilliance that returns you to Mother Earth satisfied (and with some amount of dignity). It's also the most difficult aspect of flying to master. While there are many different types of approaches and aircraft to land, the actual transition from air to ground is consistently similar.

We'll cover a few of the basics, setting aside complicated navigation techniques and communication procedures, as well as

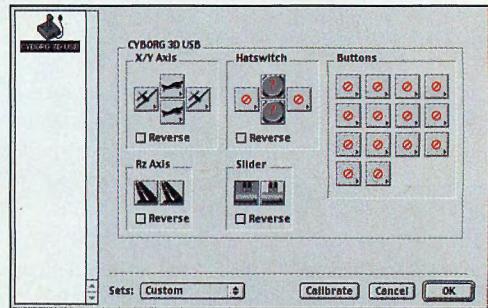
Tower to November-one-zero-zero-niner...try using the yoke instead.

challenging atmospheric conditions, to focus on nailing the base and final legs of a standard traffic pattern. To simplify things even further, we'll fly one of the most common training airplanes, the small but nevertheless vastly expensive Cessna 172R, from about 700 feet above ground into San Francisco International. We recommend you read through the entirety of this how-to before your flight so you can anticipate each step—this scenario moves very fast. Stay calm and focused, and you'll get down with more grace, ease, and enjoyment than you thought possible.

THE LANDING SETUP

1 Assign Your Controls

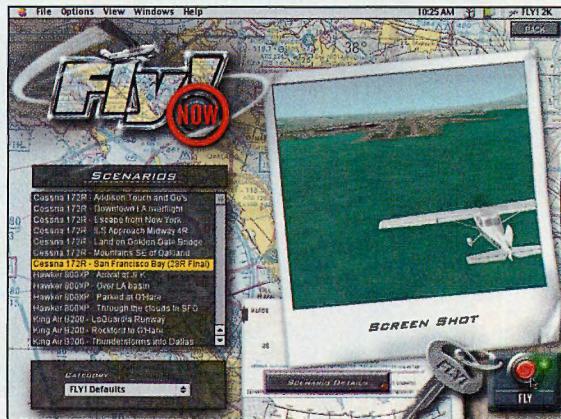
Turn up your sim's sound to an audible level, as the sound of your engine is a good way to judge your flight performance (besides, if you undershoot the runway and inadvertently take a dip in the water, the sound of the water lapping against your plane is remarkably calming). Flight sims are the ultimate test of your joystick—along with the usual x and y yoke controls, you'll also need throttle, rudder, and trim controls. You should position all these controls on your joystick, if possible; assign the yoke controls to the stick itself, and make sure you can use the throttle with your other hand (if your joystick has a thumbwheel-style throttle, so much the better—you'll need to use yoke and throttle simultaneously). A yoke and pedal setup is ideal but not essential.



Assign your joystick controls intuitively.

2 Set Up Fly2K

Open Fly2K and press the Fly Now button. This brings up a list of scenarios, each paired with a particular aircraft. Select Cessna 172R—San Francisco Bay (28R Final): 28R is the name of the rightmost of two runways facing 280 degrees, or just north of due west, measured to the nearest 10-degree increment. Press the red Fly button in the lower right corner of the screen. While this scenario isn't terribly realistic (planes are rarely allowed to fly straight in), it allows you to avoid the 90-degree turn you'd normally have to make halfway down, a maneuver that can be tricky at first.



Warning: Taking Polaroids while levitating outside your aircraft can be hazardous to your health.

3 Review Your Checklist

While the scenery is loading, review your checklist (you may have to create one for yourself if your manual does not have one) so you can act fast when the scenario begins. In this scenario, you start with most of the usual checklist items already taken care of—the mixture is already rich (meaning more fuel than air is going into the engine), the fuel selector is drawing from both tanks, the heading indicator is aligned with the compass, the pressure setting on the altimeter is correct, and there are no malfunctioning instruments. Moving down the checklist, it's just about time to switch on the landing lights and start manually applying flaps.

Ho-hum. Instead of letting your eyes glaze over while the scenario loads, use this time to review your landing checklist and down your cappuccino.



Buttons, and Switches, and Knobs—Oh My!

One potential mistake when you're doing any kind of flight maneuver, but especially when landing, is to fixate your gaze on a single instrument or point outside the aircraft for more than a second or two. While you're staring at the turn coordinator

and leveling your wings perfectly, for example, you might lose critical altitude and end up getting a little too well acquainted with the side of a mountain...or a family of sharks in San Francisco Bay.

Develop your own scanning technique so

you can quickly and continually keep an eye on each of the instruments most relevant to the maneuver you're performing. Here's a look at the instruments you'll need to scan throughout your landing procedure, as they appear in the Cessna 172R.

Altimeter. Shows your height above the ground. The one shown here is called a *sensitive altimeter* because you can adjust the pressure setting inside the gauge.

Course deviation indicator. Shows your lateral and vertical position along the instrument approach path (see "Head in the Clouds," p68).

Compass. The only direction-seeking instrument in the aircraft.

Audio control panel/radios. Communication and navigation radios.

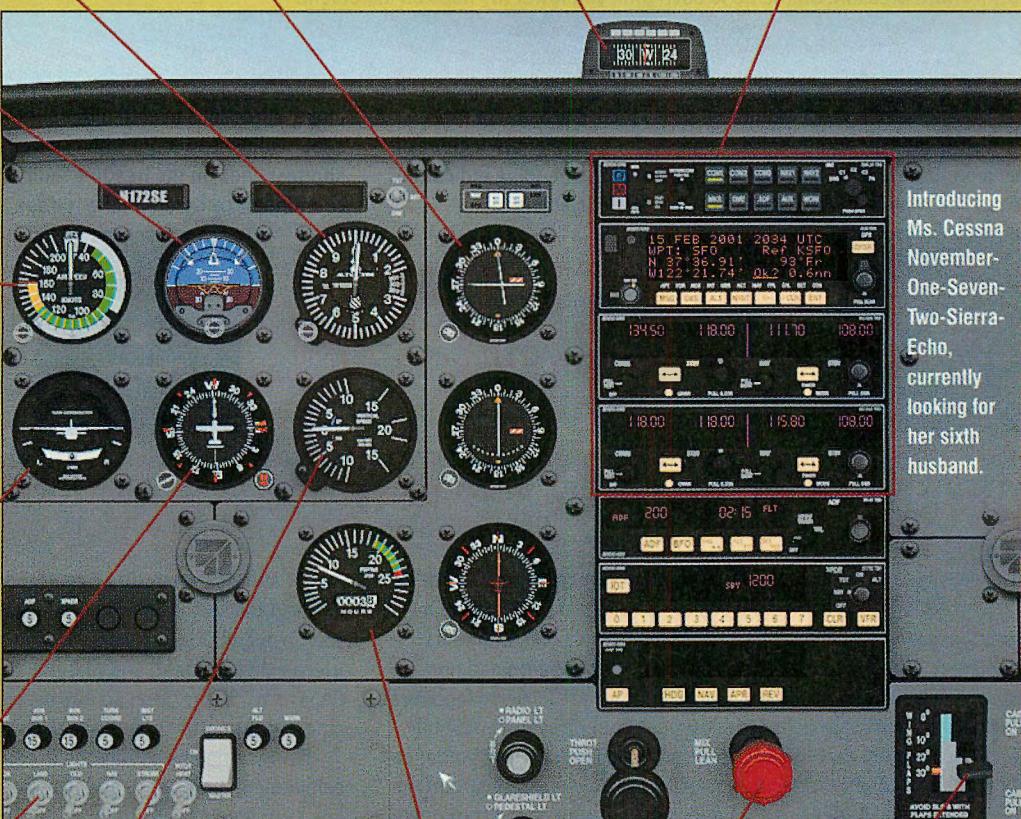
Attitude indicator. Shows aircraft pitch (nose up or down) and bank (side to side), and represents the real position of the plane in the air; it's considered the most important instrument in most maneuvers.

Airspeed indicator. The green arc represents normal operating speed. The white arc indicates the range of airspeeds in which you can apply flaps without endangering your aircraft's well-being.

Turn coordinator. Shows the coordination of the wings and the rudder during turns. The miniature airplane indicates rate and direction of turns, and the ball (which should remain centered) indicates the quality, or coordination, of turns.

Heading indicator. Shows the direction of flight when you adjust it to match the compass.

Landing light. This switch activates the landing light at the front of the airplane.



Vertical speed indicator. Indicates climb or descent rate per minute.

Tachometer. Shows engine power in rpm.

Mixture. Regulates the air-to-fuel ratio flowing into the engine.

Wing flap position indicator. Indicates the degree to which you have extended the wing flaps.

THE BASE (OR CROSSWIND) LEG

1 Throttle Down

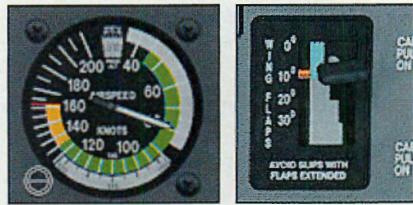
Your starting altitude in this scenario is nearly 300 feet below a typical traffic pattern altitude (normally 1,000 feet above ground level), but you're in a good position to land relative to the runway. You'll need to pull back the throttle control for a power setting of 1,700 rpm (shown on the tachometer) and apply a bit of forward pressure immediately to keep your aircraft from gaining altitude (which it's just dying to do). Keeping the wings level for stability, press the W key to bring up the Second Window Camera and position it in the lower right corner of the screen. Next, use the mouse to crop out all unessential portions of the instrument panel, then press Shift-L to turn on the landing lights.



You'll start out high, but while you set up, just keep your plane flying steady.

2 Start Lowering the Flaps

Increase the speed of your instrument scan at this point and lower or raise the nose of the aircraft so the attitude indicator's miniature orange airplane sits just below the instrument's artificial horizon (the central, horizontal white line). Use your trim control to hold this yoke position steady. As soon as possible after the airspeed slows to less than 85 knots (if this isn't happening, pull the throttle back just a bit more, holding the nose steady), press the F key to extend the wing flaps 10 degrees. The flaps are intended to steepen your angle of descent. However, because lowering them effectively changes the shape of the wings, causing a shift of airflow over the wings, the nose of the aircraft tends to rise a bit when you apply flaps. To avoid losing sight of the runway, apply forward pressure on the nose each time you lower the flaps an increment.



Once your airspeed reaches 85 knots, you can extend some flaps to steepen your descent.

3 Stay Aligned

When your aircraft stabilizes, press the F key again to extend the flaps an additional 10 degrees, for a total of 20 degrees of extension. During this time, don't lose track of the heading indicator: The further away from the runway you are, the easier it is to

make corrections in your alignment with the runway centerline. You should make corrections of less than 5 degrees (marked by the shortest lines on the heading indicator), keeping the ball in the turn coordinator centered on the rudder.



This kind of turn, represented in the turn coordinator with the ball away from center, will likely put you into an uncoordinated stall—you'll spin round once or twice and then crash into the ground, bloodily dismembering both your plane and your body. Use the rudder control to center the ball.



This kind of turn, represented in the turn coordinator with the ball centered, is coordinated and safe.

Head in the Clouds

Twenty-twenty vision won't do you much good when a storm rolls in and all you can see out your windshield is the inside of a gray, hazy cloud. There are a lot of different types of instruments designed to help pilots operate effectively despite virtual blindness and immensely complex instrument flight rules. The key to landing in these conditions is to use the instrument landing system (ILS), an approach system that provides precise lateral and vertical guidance by emitting two different frequencies from stations at the airport. In the Cessna, you follow the ILS signal with a device called the course deviation indicator (CDI). On the correct frequency, the navigation radio activates the CDI, which displays your aircraft's position in relation to the instrument path to the runway. If the vertical needle moves to the right, your plane is left of the runway centerline; if the needle moves to the left, you are right of the centerline. If the horizontal needle moves above center, you are below the glide

slope, and vice versa. The idea is to keep a perfect plus sign (+) on the CDI face while you do everything to prepare for landing (decreasing airspeed and altitude, applying flaps as necessary, and so forth)—all without ignoring your other instruments. Easy, right?

Flying under IFR conditions is equally exhilarating in real life—and just plain spooky. When flight visibility is low, your life depends on precise control of your aircraft, attention to physical disorientation, and unfailing contact with Air Traffic Control. In landing, a 2-degree deflection of the CDI needle left unnoticed or disregarded could position you dangerously far from the airport, dangerously close to the ground. You cannot land at all airports in IFR conditions, and the airports at which you *can* land publish very specific instrument approach procedures for pilots to follow.



Here you are too high and hopelessly right of the runway.

THE FINAL APPROACH

1 Start Your Approach

The final approach normally begins about one-quarter mile (or 1,320 feet) away from the runway threshold. You can gauge the steadiness of your approach perfectly by picking an aim point (typically a broad white stripe located on each side of the centerline about 1,000 feet from the threshold) on the first one-third of the runway: Its position on your windshield should remain fixed. You should be descending steadily, close to 500 feet per minute (check the vertical speed indicator), your airspeed should be decreasing from about 80 to about 55 knots, your wings should be level, and the nose of your aircraft should align with the runway centerline.

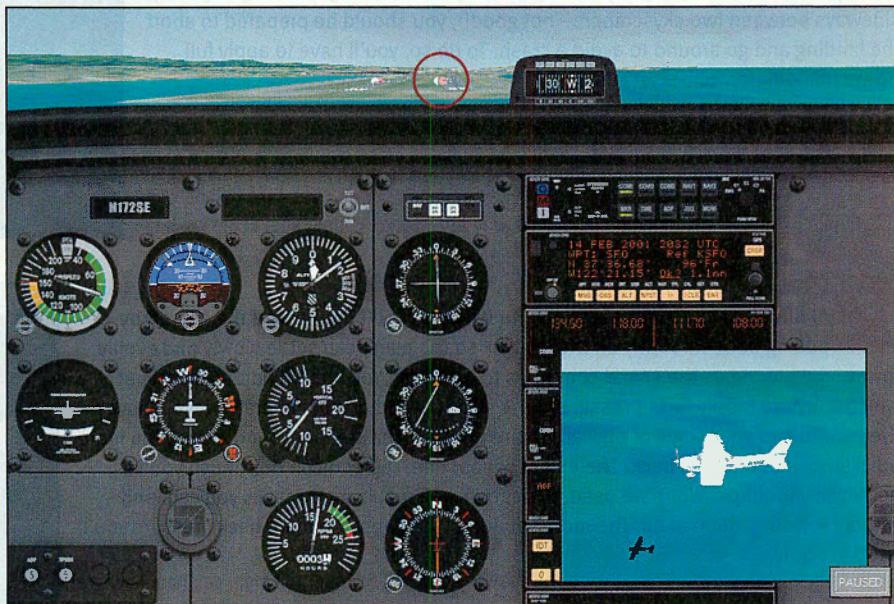


The white bars to the right and in front of the lights mark your aim point.

2 Don't Aim Too High or Too Low

Most large airports have lighting systems to help you judge if your altitude is too high or too low on the final leg. At San Francisco International, these lights are called *precision approach path indicators* (PAPI), and consist of four lights on the left side of the runway near the approach end. Four white lights indicate that you're too high, four red lights indicate that you're too low (not a good thing when you're hovering over the ocean!), and two red and two white show that you're right where you should be.

White plus red equals perfect—and just look at that cute little shadow on the water!



3 Handle the Back Side of the Power Curve

At this point, press the F key again to extend your flaps the last 10 degrees, bringing the total amount to 30 degrees. Determine whether you are too high or too low by looking at the lights. As you approach the runway and your airspeed bleeds off (decreases), you will reach a point called the *back side of the power curve*. When you reach this point, suddenly your controls behave quite differently than in ordinary flight—your throttle controls altitude, while changing your pitch controls airspeed. If you are flying too low, add a bit of power and lift the nose. (If you try to stretch a glide only by pulling back on the controls, you will sink rapidly.) If you are too high, reduce power and lower the nose. If you are too far to one side of the runway, it is critical that you don't turn too quickly to correct your alignment. In fact, overcontrolling your aircraft is a common mistake—and tough to avoid at first. Turns to correct your alignment with the centerline should be minuscule—no more than 2 degrees.



This isn't a pretty picture. If you see this kind of view, instantly increase power and, unless you are close to stall speed, lift the nose.

THE ROUNDOUT (OR FLARE)

During this final transition stage, move your eyes continually between the nose of the plane and the horizon so you can judge your relation to the ground. You'll actually need to shift your aim point forward on the runway. (Ideally, your wheels should touch down on the

runway numbers). Begin to include the Second Camera Window in your scan—since you don't have the benefit of peripheral vision, this view from outside the plane really helps you gauge the attitude of your plane in relation to the runway surface.

1 Idle the Engine

When you cross the runway threshold, slide your throttle back to idle but don't remove your hand from the throttle control. If at any point you are not in position to land (maybe your airplane is situated as if you were going to fly sideways between two skyscrapers—not good!), you should be prepared to abort the landing and go around to avoid a crash. To do so, you'll have to apply full power immediately and start climbing.

Even though this plane is in a coordinated position, it's dangerously low and in too dramatic a bank to land well. It would be best to go around and take another shot at the landing.



2 Flare

At about 10 to 20 feet above the runway, gently lift the nose of the aircraft by pulling back smoothly on the joystick so the plane can settle slowly and evenly toward the ground as the speed continues to bleed off. You should adjust the rate at which you *flare* (apply back pressure to the stick), based on your aircraft's level above the ground and your angle of descent to the runway—the steeper your descent, the more quickly you need to pull back. The extent of your flare depends on how much you've deployed your flaps. While we used 30 degrees of flaps, in many cases you can land without lowering them at all. The more you lower the flaps, the more back pressure you'll need to apply.

Your plane's nosewheel still high, you flare over the numbers, looking down the runway.



3 Make Last-Minute Corrections

If your flare is too high, you might wind up floating above the runway and missing your touchdown point by a quarter mile—which can be very embarrassing. If you find yourself floating, hold the back pressure steady or relax it only slightly; as your aircraft loses speed, it will begin to settle down toward the runway and you can continue the flare. If you do not flare high enough or if you delay your flare too long, you might end up performing a sort of controlled crash, flopping onto the runway—hard. If you feel you're descending too quickly and flatly, apply a bit of power for some lift, flare more sharply than you did before, and then pull the throttle smoothly to idle again.



If you flare too high and begin to float, stay over the center of the runway and hold the back pressure steady or relax it just slightly.

4 Touch Down

Huzzah! When your wheels squeal against the pavement, relax the back pressure so the nosewheel touches down last. (In tailwheel airplanes, all wheels should touch the ground simultaneously.) Once all the wheels are on the ground and you've completely released the back pressure, use the rudder (again, take care not to overcontrol the plane) to maintain the runway centerline. Press and hold the B key to apply the brakes and slow down, exit on the first taxiway to your right, and come to a stop.

Once all the wheels are on the ground, you can slow down using the brakes.



Jenifer Morgan enjoyed her emergency landing in a field near the airport in Birma, Egypt.

Aye, 'Tis An Offbeat Adventure
Of Piratey Proportions!



www.aspyr.com
monkey4.lucasarts.com



Comic Mischief
Suggestive Themes
Use of Tobacco
and Alcohol

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Fix Flaws in Any Photo

by Kris Fong



WHAT YOU'LL NEED

- Adobe Photoshop 6.0 (\$609, www.adobe.com)
- A digital camera
- Nonphotogenic subjects



Find a
Photoshop 6.0
tryout on
The Disc.



Find these
photos for
your tweaking
pleasure at
www.macaddict.com.

One minute you're blissfully happy, posing for a photo at the peak of Mount Kilimanjaro. The next, you're freaking out when you realize that the humongous zit that has erupted on the end of your nose is going to dwarf the mountain. If only you had your trusty PowerBook in tow to do a little last-minute photo retouching.

These days, if you want perfect pictures, you don't need to shell out wads of cash to hire a professional retoucher. With the right software, some know-how, and a little practice, you can improve any of your photos. Whether the problem lies in the photographer's inadequacies or a not-so-perfect subject, an image editor like Photoshop can turn trash into treasure.



PHOTOGRAPH BY KRIS FONG

It's not nice to fool with Mother Nature, but we did it anyway. After adjusting the image levels, contrast, and color balance, cloning out the fallen leaves, and painting life back into the dead ones, we have a much cleaner, less cluttered oasis.

We'll explain how to fix and retouch some of the most common problems found in just about everyone's photo collection. With these tips, you can even out exposure problems, sharpen fuzzy images, banish color casts, and get better contrast in your photos. We'll also demonstrate how to make people in your photos look better by fixing skin imperfections, whitening teeth, getting rid of red-eye and face shine, and enhancing makeup. We're using Photoshop, but any similar image editor will do the trick.

EXPOSURE EXPOSÉ

A camera doesn't see the world as your eyes do. Your brain quietly does a lot of postproduction work—it alters light levels and colors so we can simultaneously see sun-drenched areas and objects lurking in the shadows. A camera can't do that; it has to pick a single light level for the entire view, which means you must choose whether to accurately capture the bright side or the shady side. The result is that parts of your picture end up underexposed or overexposed. Luckily, you can make up for your camera's shortcomings with software.

Surf's up, Ian! Wait, that's not a surfboard—that's an iBook! We should've known...although it's kind of hard to see it in this underexposed photo.

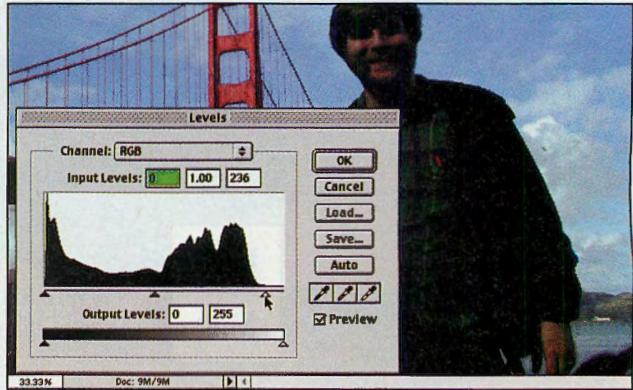


PHOTOGRAPH BY ANDREW TOKUDA

1 Fix the Contrast

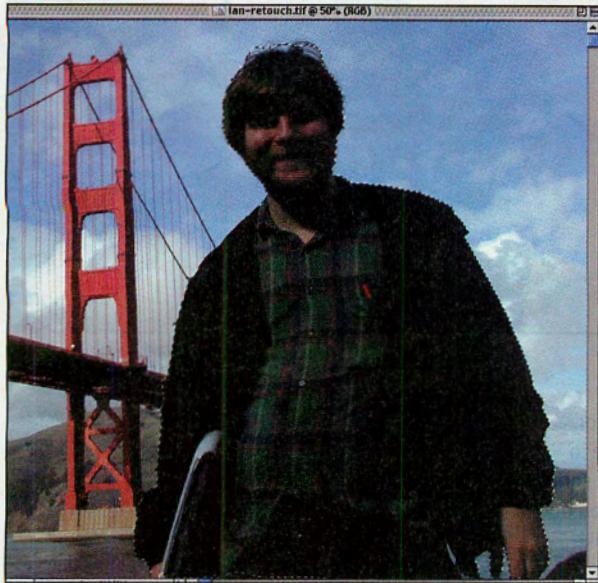
Go to www.macaddict.com, and download Ian.tif. Open the file in Photoshop (you'll find the Photoshop demo on The Disc). The bridge and the sky are well exposed, but poor Ian has turned into a somewhat shady character. The overall contrast is flat and the slight cyan and blue color cast makes us feel a little seasick. Let's first fix some of the contrast problem using Levels. Under the Image menu, select Adjust, then Levels. To increase the brightness, move the rightmost slider (called the *highlight* slider) to the left until it rests at the end of the image data (the mountain range). Then click OK.

By brightening the highlights, you'll increase the contrast between light and dark areas.



2 Banish the Bad Parts

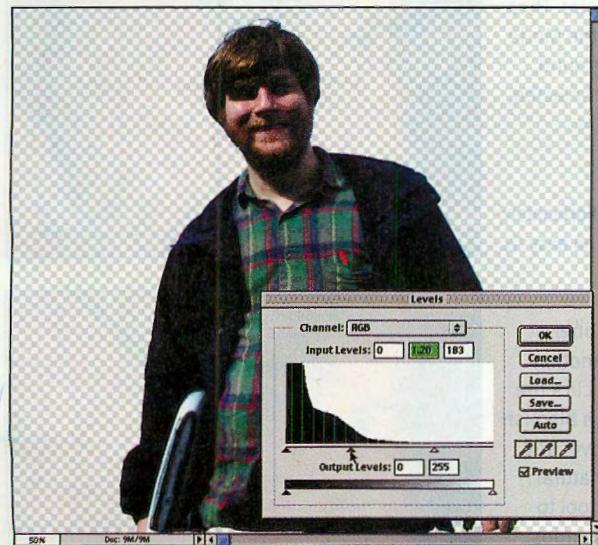
Next, we'll lure Ian away from the dark side by separating him from the background layer. Select the magnetic lasso tool (this looks like a triangular lasso next to a horseshoe magnet) and carefully click around Ian's perimeter until you've outlined him completely. Then copy and paste him into a new layer. Turn off the visibility of the Background layer to see your cutout selection. Use the eraser tool to get rid of any extraneous matter you might have included.



This is your chance to show off your steady mouse hand.

3 Brighten the Dull

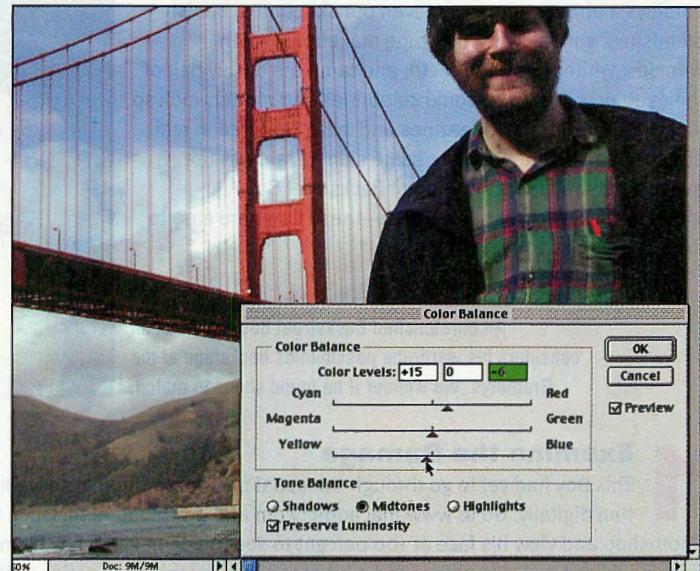
With the new layer selected, open the Levels dialog box again and move the highlight slider to the left until Ian's face lights up without becoming overexposed. Then shift the gray slider (the midrange slider) to the left to lighten his clothing and other dark areas. Click OK when you're done. Turn on the visibility of the background layer to see your results. If any bright artifacts surround Ian, set the eraser tool to 5 pixels and carefully erase them from the new layer.



By sliding the midrange instead of the highlight slider, you can lighten Ian without washing him out.

4 Bring Out the True Colors

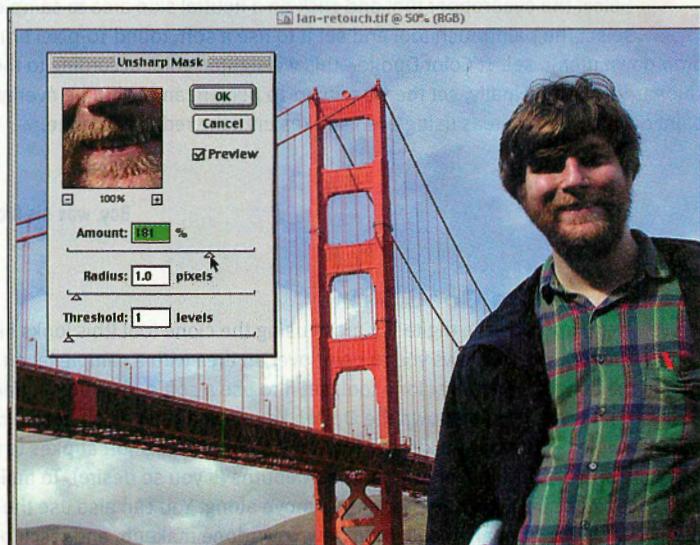
Use the Color Balance dialog box to get rid of the color cast and turn the bridge back to its original color. Under Image, select Adjust, then Color Balance. In the dialog box, increase the red to lessen the amount of cyan and return the Golden Gate to its true color. Add a bit of yellow to bring out the color in the hilly backdrop. When satisfied, click OK. Then flatten the image by selecting Flatten Image under the Layer menu.



Now that we've moved things away from cyan slightly, the image has lost its odd coloration problem.

5 Polish Off the Details

Fine-tune the photo by increasing the brightness a bit more in Levels (again). This time, move the gray slider to the left until everything looks balanced. Then make the colors pop a bit more—under Image, select Adjust, then Hue/Saturation. Increase the saturation until the colors are vivid without looking too Mickey Mouse. Finally, sharpen up the details with the Unsharp Mask—under the Filter menu, select Sharpen, then Unsharp Mask. Keep Radius at 1 pixel and adjust the Amount slider until Ian's beard and the bridge cables come through crystal clear.

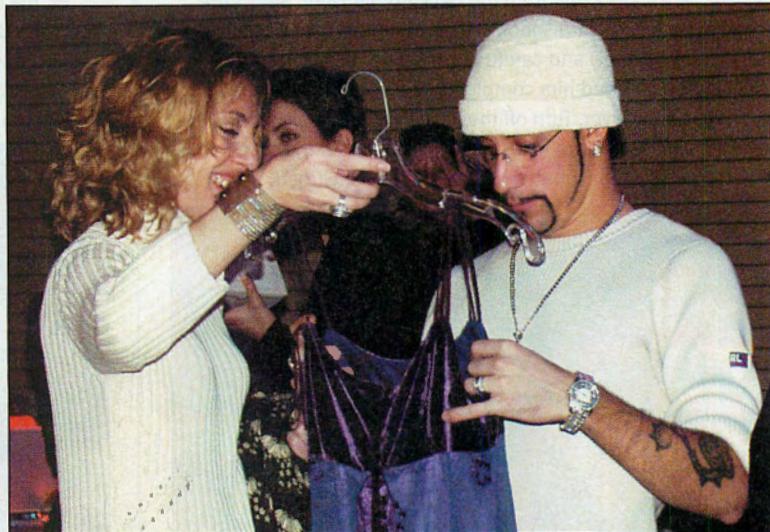


We now see Ian with his usual bright and cheery demeanor. Of course, the real challenge is separating Ian from the iBook...without using the clone tool.

CHARACTER FLAWS

A little Revlon and Cover Girl can only go so far when it comes to concealing skin imperfections. That's why just about every fashion, beauty, and celebrity photographer employs a photo retoucher to even out skin tones, banish blemishes, shrink pores, fine-tune makeup, smooth wrinkles, whiten eyes and teeth, and tame the unruly hair of their subjects. How else could celebrities and models look so amazingly flawless in magazines and ads? Captured in real life, they often suffer from the same skin hazards as the average person, as in this snap of Backstreet Boy A.J. McLean. Luckily for them—and you—these flaws are easy to fix in Photoshop.

An unretouched Backstreet Boy A.J. McLean considers his wardrobe possibilities backstage at the Grammys. We wonder if he found shoes to match.



PHOTOGRAPH BY KHS FONG

1 Examine the Damage

This Boy had yet to go through the usual preshow primping, so we'll do it for him digitally. Go to www.macaddict.com and download AJ.tif. Open the file in Photoshop and view his face at 100 percent to see the damage—a few blemishes, some flushing, blown-out skin shine, and a bit of red-eye—nothing too serious. We'll even out the red skin first by applying color dodge. Magnify the image to 200 percent to make precise corrections like these.

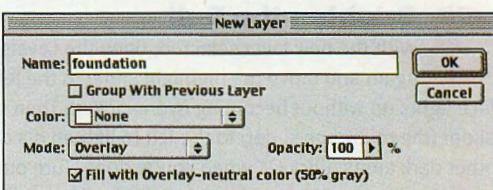
Bigger than life—but not better.



2 Deblotch the Boy

To ease the blotchiness in his cheeks and nose, create a 50 percent gray layer—this keeps the skin level detail intact. Under the Layer menu, select New, then Layer. In the New Layer dialog box, give the layer an appropriate name—we'll name ours *foundation*. Select Overlay from the Mode drop-down menu and check Fill With Overlay-Neutral Color (50% Gray) in the dialog box. Click OK.

This will get those blotches under control.



3 Make His Face Less Red

Select the eyedropper tool and click on a neutral skin area to sample the color. Then select the paintbrush tool and set it to use a soft, round 10-pixel brush. In the Mode drop-down menu, select Color Dodge—this will lighten color according to the foreground color as you paint. Finally, set the Opacity to 10 percent and, with the overlay layer selected, paint over the ruddy areas using even strokes until the redness is gone.

Boy, was his face red! Fortunately, that's an easy fix.



4 Clone the Good Skin

Next, apply a little digital Clearasil using the clone tool (this looks like a rubber stamp), which allows you to paint over an area with a sample taken from another part of the image. Select the clone tool, set it to use a soft 5-pixel brush, and then click the Background layer. Holding down the Option key, click a clear patch of skin next to a blemish and then release the Option key to obtain the sample. Use short strokes to paint over any blemishes, scars, tattoos, or even funky sideburns (if you so desire). To maintain natural skin tones, take frequent samples as you move along. You can also use the clone tool to remove anything from an image, tone down overdone makeup, and resculpt bad hairdos.

With clever use of the clone tool, you can give almost anyone perfect skin.



5 Make His Nose Less Shiny

Remove the hot spot on A.J.'s nose (caused by the camera's flash) with the clone tool just as you did with the blemishes, but this time paint over the white spots. Sample skin from bordering areas to keep the skin tone consistent. To smooth out any other irregularities, use the eyedropper tool to sample a neutral skin tone, and then select the airbrush tool with Pressure at 15 percent and lightly paint over any rough patches. This trick also minimizes large pores.

Ah, that's better—no one short of Rudolph should have such a shiny nose!



6 Take the Red-Eye Away

Red-eye can make the seemingly innocent appear hellishly demonic—especially when those peepers are aimed in your direction. To get rid of the glow, magnify the image up to 300 percent to see the actual pixels. Use the eyedropper tool to select a pixel that borders the red-eye glare. Then use the pencil tool to plot a point next to it in the red zone. Work from the outside in until the redness is gone. Use the smudge tool (looks and acts like a finger) to blend any ragged edges.

With the subject's eyes back to a normal, healthy black, the photo will no longer scare small children.



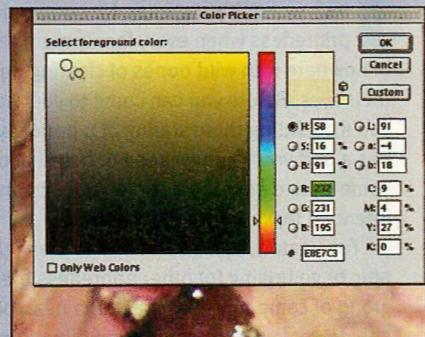
After a little fine-tuning and some sharpening, we now have a much more flattering photo. If you're really up for a challenge, remove the peeping tom in the background with the clone tool, using the slat wall as your concealing sample.

Change the Details

Photo retouchers can do more than simply fix flaws—they can often enhance an image with some nifty alterations. You can add or change makeup and hair or eye color, whiten teeth, tame bed head—as with Phyllis Diller's facelifts, the possibilities are endless. We'll wield our mouse magic on A.J.'s gal pal this time.

1 White Teeth

After retouching the hot spots and flushed skin on our party girl, we notice that instead of flashing a row of pearly whites, she's showing off her cookie-dough yellows. To brighten her teeth, click the whitest area of one tooth with the eyedropper tool. Then click the foreground color swatch in the toolbar to open the Color Picker, select a shade two to five times brighter than the sampled color, and click OK.



A mouth full of pearly yellows won't impress anyone—time for some digital dentistry.

2 Fix the Mouth

Next, select a soft, round 5-pixel Paintbrush with Mode set to Lighten and Opacity to 20 percent. Then start painting over the yellow in short, even strokes. Don't apply the paint layer too heavily or you'll mask the tooth and its texture completely. Keep in mind that no one has truly white teeth—avoid using pure white or your subject may end up looking like the Cheshire Cat.

Ah, that's better—now she has a mouth she can be proud of.



3 Digital Lipstick

One way to enhance features is to apply virtual makeup. We'll enhance our glamour gal's new smile with a bit more lip color. Select the Fill With Overlay-Neutral Color option, then choose a lipstick foreground color—we settled on a deep burgundy. Select a soft, round 5-pixel brush (change to a smaller brush when painting in the mouth corners), set Mode to Color Burn and Opacity to 10 percent, and paint very carefully along the lips, avoiding the gums, until you achieve the desired color. When satisfied, flatten and save the image.

Now let's frame those teeth.



Print to Non-Mac Printers

by Ian Sammis

EASY

WHAT YOU'LL NEED

- A printer with no USB or Ethernet connection
- About \$100 for various devices and software

If there's one thing you can't do without for long in this high-tech world, it's a printer. No sooner do you let it slip that you're printerless when every family member within 50 miles leaps out of nowhere with wild hopes of clearing out their attics gleaming in their eyes. Before you can come to your senses and make a run for it, you'll be sitting there staring at a perfectly good printer—but one that has a port you've never seen or heard of before. Sometimes it's just some device from the dawn of Mac history, but often it was never intended to work with the Mac at all.

Fortunately, there's no need to stash that puppy in your own attic or go trolling for other printerless friends. A small but enthusiastic group of companies has created a heap of cables, drivers, and interfaces that should get you printing on everything from StyleWriters to pen-based plotters without breaking a sweat or adding yet another aging but active LaserJet III to our overflowing landfills. Here's how to do it.



It's like relationship counseling for your hardware.

ILLUSTRATION BY SEAN KAPTAIN

1 Old-Style Macintosh Serial Printers

If you just want to print to an old Apple StyleWriter, HP DeskWriter, or other serial Mac printer, you're in luck. Because the printer was designed for the Mac in the first place, your toughest job—finding drivers—has already been solved. All you have to do in this case is find a way to plug your eight-pin serial cable into your USB-based Mac (of course, if you've got a beige G3 or earlier machine, you can just plug the printer straight into a serial port!).

The simplest way to get around the serial port problem is to buy a USB-to-serial converter. Keyspan's USB Twin Serial adapter (\$79, www.keyspan.com) is a good example of this sort of device—it's small, provides two serial ports, and will let you print to all but LocalTalk printers such as LaserWriters. Once you plug in the adapter and load its drivers, the serial ports should appear in the Chooser, letting you use your older drivers (as long as they're recent enough that they won't crash your system outright) without incident.



If your printer was originally designed for the old-style Mac serial ports, you'll need a serial port adapter.

The Backside of the Problem

Trying to print to a low-end printer introduces exactly the opposite type of problem you encounter when you're trying to print to high-end workgroup printers. Nearly all workgroup printers speak the same language (PostScript), but they use a host of

different delivery methods to get the PostScript data to the printer. Low-end printers, on the other hand, nearly all use the same parallel interface (Mac-specific printers excepted), but they speak more languages than you'd hear at a United Nations cocktail party.

If you're lucky, your printer will supply Mac drivers, in which case all you need is a cheap interface cable. If you're unlucky, the original manufacturer will be one of the many that never bothered with Macs (your printer might be so old it predates the Macintosh platform!).

2 LocalTalk Printers

Some vendors take a dramatically different approach—instead of converting to serial using USB, they replace your modem. The internal modems on post-iMac machines sit quietly in what's basically a stripped-down serial port. Griffin Technology (www.griffintechnology.com) and GeeThree (www.geethree.com) both sell a variety of \$50 devices that plug into the internal modem slot on many machines and replace the phone jack on the outside of your case with a serial port. There aren't any limitations on this port—it can handle everything the old, familiar ports could, up to and including LocalTalk. The biggest problem with this sort of solution is that installing the ports can be a chore—make sure you're very comfortable fiddling with your machine's insides before you get a device of this sort.

If you don't want to muck around with your computer's innards and you've got a free PCI slot, you can always simply insert a PCI card that adds one or more serial ports. You can get these cards from several manufacturers, including Keyspan (\$179 for a four-port card)



You can either borrow your modem's serial port...
...or just add a few more.



3 Parallel Printers

If your printer was originally designed for the PC, odds are it's got a 36-pin parallel port in the back. While USB-to-parallel converters are easy enough to come by, not every converter works with every printer—you'll need drivers that speak to the particular printer you want to use.

The easiest drivers to find are those for older Epson Stylus printers, because Epson (rather cleverly) decided some time ago that selling printers was more fun than selling USB adapter cables. Its drivers thus explicitly understand generic USB-to-parallel converters built by Keyspan, Belkin (www.belkin.com), and several other companies. To print to a wider range of printers, you'll need a product like PowerPrint (\$99, www.strydent.com) by Strydent Software. PowerPrint ships with a host of drivers that can handle the vast majority of standard PC printers on the market—everything from low-end HP LaserJets to Panasonic dot-matrix printers (granted, the prints from the latter probably won't look too impressive!).

To see if you can use PowerPrint, find your printer on the massive table Strydent maintains on its Web site (www.strydent.com/pcl/index.htm). If your printer is supported, all you have to do is install the appropriate driver, hook up your printer using the PowerPrint-supplied cable, and select your new printer in the Chooser.



USB-to-parallel adapters are easy to find—it's the drivers you'll have trouble locating.

4 Plotters and Large-Format Printers

Sometimes your printing needs require something a tad more unusual than run-of-the-mill inkjets and laser printers. If you work with maps, blueprints, or posters, you're probably using a plotter or a large-format printer. Originally, plotters pulled a pen mechanically over a piece of paper, but these days they're often just superlarge-format inkjet printers. Because these behemoths are designed for compatibility with their pen-based ancestors, the languages they understand (HP-GL/2, for example) are very different from what their smaller siblings speak.

Fortunately, a small company called Microspot (www.microspot.com) has written drivers that can handle many of these megaprinters. Microspot's product line offers drivers for most large-format printers. GraphicPak and NetworkPak can handle printers with paper sizes below and above 36 inches, respectively. MacPlot and MacPlot Pro control pen-based plotters, so they only work with vector files (pen-based plotters draw lines by physically dragging a pen over paper, so they can't print raster art).



If you need paper sizes measured more easily in feet than in inches, you'll probably be having a chat with Microspot.

Ian Sammis likes hooking up printers much more than actually printing.

ask us

If your Mac's broken, we'll listen, but this ain't Cosmo—keep your relationship problems to yourself.

Questions?

Submit technical questions or helpful tips directly via email (askus@macaddict.com) or c/o **MacAddict**, 150 North Hill Dr., Brisbane, CA 94005.



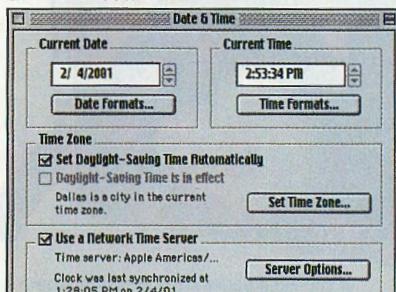
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Q At my work, we have a network time server that gives the correct time to the computers on our network via IP. My clock is always right, but my coworker's is always a few hours off. The minutes are right, but the hours are wrong. What gives?

A Using a network time server is a wonderful way to make sure your computer always has the right date and time. In fact, Apple even provides a few public time servers in the Date & Time control panel, and you can find even more at www.ntp.org. These network time servers use the Network Time Protocol (NTP) to broadcast the correct time to Internet-connected computers.

NTP relies on the Coordinated Universal Time (UTC), an amazingly accurate international measurement of Greenwich Mean Time, and your computer adjusts this information for your time zone to figure out the correct local time. Of course, your computer needs to know where you live to do this! There lies the problem: Your coworker's clock is always off by a few hours because he or she has the time zone set incorrectly, so the Mac is cheerfully giving the correct time for somewhere else on the planet.

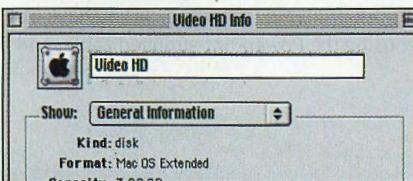
To correct this, open the Date & Time control panel and select the proper time zone. Now the computer will always have the correct time.



Set the appropriate time zone, or your Mac may not give you the correct time.

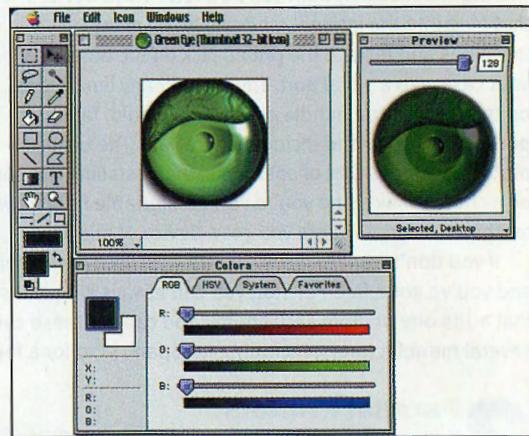
Q In your magazine I often see screenshots of customized icons for the hard drive. I've looked through the Mac Help menus and cannot find out how to create these custom icons. I'd love to put a cool *Star Wars* icon on my hard drive, since I call my computer Skywalker.

A On the Mac, adding a custom icon is easy—it's simply a matter of copying and pasting. To copy an icon from one file or folder to another, first click the icon you want to copy to select it. Choose Get Info from the File menu to bring up the Get Info box. (The same process works in Mac OS X with a bit of renaming—choose Show Inspector to bring up the Inspector window.) Click the icon in the upper-left corner of the window to select it, then choose Copy from the Edit menu. Now repeat the process for the item to which you want to give the new icon, but this time choose Paste instead of Copy to set the item's icon to the custom one.



You can copy and paste that little icon in the upper-left corner anywhere, even on top of other icons.

All that's fine, but where do you get cool icons in the first place? The Web is littered with good sites for Mac icons. Our favorite is [Iconfactory.com](http://www.iconfactory.com) (www.iconfactory.com), which has tons of cool icons, including a few *Star Wars* sets. Just download a set and unstuff them to get a series of folders with custom icons. To use one of the custom icons, select the folder, bring up Get Info, and copy and paste one of the new icons onto your hard drive icon. You'll be in *Star Wars* icon heaven. Since icons in Mac OS X appear quite a bit larger than their traditional Mac OS counterparts, you'll want to use X-specific icons. [Xicons.com](http://xicons.macnn.com) (<http://xicons.macnn.com>) is a great place



Making your own custom icons is easy with Iconographer—it even works with Mac OS X's superbig 128 by 128 icons!

to find icons designed for Mac OS X. If you can't find any icons that suit your fancy, try making your own. Iconographer, a truly outstanding program from Mscape Software (www.mscape.com), is probably the best icon designer out there right now.

Q Why does my computer reset the clock to January 1, 1904, when I remove the PRAM battery?

A The PRAM (Parameter RAM) battery is a very important part of your computer, and all Macs have one. This tiny battery keeps a small amount of memory active to store important information when you turn off your computer. The information actually stored in PRAM varies from Mac to Mac. Some of it deals with the computer's deep inner workings, but the most easily apparent piece of information PRAM maintains is the date and time. The PRAM battery keeps your Mac's timekeeper going—think of PRAM as the key that winds your computer's internal clock. When you take out or drain the battery, the clock stops and resets to a default date and time. Some older Macs reset to August 27, 1956—the birthdate of Ray Montagne, one of the designers of the original Mac CUDA microcontroller that controls the PRAM. Apple defined the default date of January 1, 1904, as time zero for the Macintosh clock. The original Macintosh clock was designed to work until 2040, but Apple has since redesigned its date utilities to handle dates until 29,940.

Q I love the Software Update control panel and use it often, but it always tells me to update Microsoft Outlook Express even though I already have the most recent version. How do I make it stop telling me to update Outlook Express?

A The Software Update control panel doesn't look at what software is actually installed on your computer. Instead, it checks the files in the Preferences folder and a database file it creates to keep track of what you need to install. Outlook Express uses its own special file (located in the Preferences folder and named OE 5.02 Update Preferences) to tell the Software Update control panel if it is installed and updated. If you do not have this file, the Software Update control panel will always tell you to install.

There are three ways to get around this. If you actually let Software Update "upgrade" OE, it will download the Update Preferences file and stop asking you to update OE. You can also get a copy of this file from a friend or

| Select software to install by checking the checkboxes: | | |
|---|---------|---------|
| Name | Version | Size |
| <input checked="" type="checkbox"/> Mac OS Runtime for Java | 2.2.4 | 4.3 Mb |
| <input type="checkbox"/> Microsoft Outlook Express | 5.0.2 | 12.9 Mb |

You can stop Software Update's whining using any of the three methods described below.

from another computer. Just copy it to your Preferences folder and you're done. The third method is a little trickier—you could actually create the Update Preferences file yourself. Open a blank SimpleText document and type the following in the first three lines:

```
BR_5_02_Hcgngr_Cerfrag = TRUE
Frperg_Nobhg_Obk = FALSE
Unyvsnk vf Terra; Unyvsnk vf Erq.
```

Save the file as OE 5.02 Update Preferences in the Preferences folder in your System Folder. Next, use ResEdit or a similar Type and Creator utility to change both Type and Creator to four question marks (????). The next time you run the Software Update control panel, it won't ask you to update your Outlook Express 5.02—unless version 5.03 comes out.

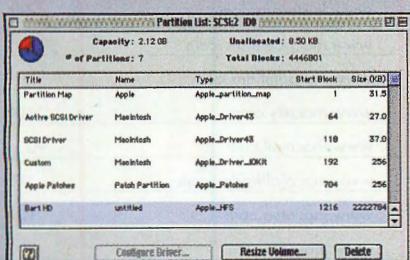
Buz Zoller is a technology support specialist for a school district in Texas.

Q I have a hearing-impaired friend who is an avid Mac user. She uses a hardware device to translate phone messages to text so she can read and respond to them. She really hates the device and would love to use her fancy new iMac in its place. I've found Windows TTY (teletypewriter) software, but I haven't found any for the Mac. Is there TTY software available for the Mac?

A Apple has Web pages dedicated to users with disabilities (www.apple.com/disability), including people with hearing impairments. There are software and hardware solutions that allow just about anyone to use an Apple computer to enrich their life. As for TTY software, there is a wonderful piece of software called SoftTTY (www.softtty.com). This \$75 application takes the place of TTY hardware—the modem takes the call and the software sends and receives text messages. You can even save and catalog to create a message archive.

Partitioning and Reformatting

Partitioning remains a bit of a mystery to many Mac users. Let's look at a number of common questions.



FWB's Hard Disk ToolKit allows you to create more than one partition without reformatting the drive.

Q When is partitioning necessary? Is it necessary at all?

A When you partition a drive, you divide it into smaller segments, which the computer treats as separate hard drives. These days, this is primarily useful for users who wish to maintain more than one operating system on their computer. Partitioning lets each operating system maintain its own virtual hard drive without having to share control with the other installed operating systems. In the past, many users partitioned larger hard drives because it made the block size (the smallest possible file size) smaller and allowed storage of more data on the drives. With the introduction of HFS Plus format (a

new drive format Apple introduced with Mac OS 8.1), this isn't necessary anymore, so we no longer recommend that mainstream users partition their drives.

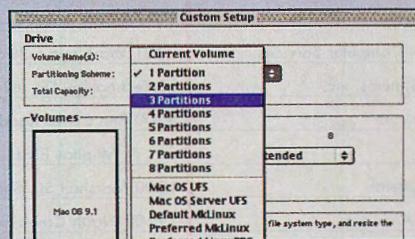
Q OK, so I want to format my drive. What do I do?

A The problem with drive partitioning is that to really do it right, you must partition the drive before you install anything on it. However, if you decide to partition your drive after you've had your computer for a while, what are your options? The safest method is to back up everything to another disk and reformat the original drive, then create the partitions during the initialization step. While it is possible to repartition an active drive, it is extremely risky and there's a good chance you'll lose everything on the drive. If you're brave (or foolish) enough to go ahead, your best bet for partitioning an active drive is to use Hard Disk ToolKit from FWB Software (\$130, www.fwb.com). This disk driver utility, which has been around for many years, can resize an existing partition and create more partitions in the empty space. If you choose to use Hard Disk ToolKit to repartition your drive, use a disk

defragmentation utility such as TechTool Pro or Norton Speed Disk before resizing—you'll want a large, contiguous portion of the disk empty for your new partition.

Q You've scared me out of trying to partition my active drive. How do I partition during a reformat?

A If you're using Apple's Drive Setup utility, start by clicking Initialize. When the dialog box appears, click Custom Setup. A dialog box will appear that lets you specify how many partitions you want, the format of each partition, and so on. Once you've set up the partitions, format away! Of course, you will wipe out all the data on the drive if you do things this way, so make sure to back up first.



If you decide to give up and reformat, Drive Setup lets you specify a broad array of partition types.

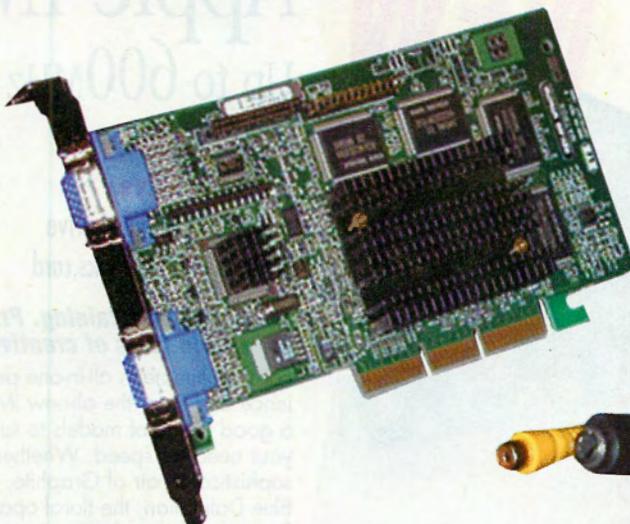
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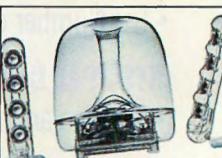
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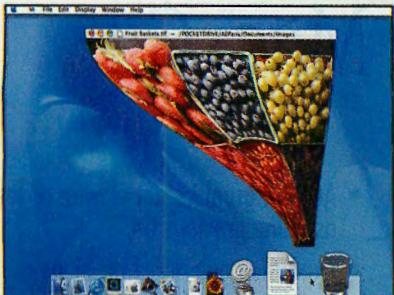
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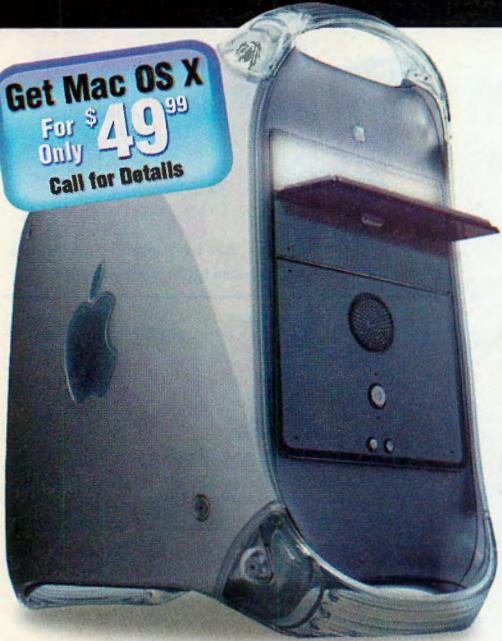
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| Hard Drive | 30GB/5400RPM | 40GB/7200RPM | 40GB/7200RPM | 60GB/7200RPM | 60GB/7200RPM |
| RAM | 128MB | 128MB | 128MB | 256MB | 256MB |
| Optical Drive | CD-RW | CD-RW | CD-RW | CD-RW | SuperDrive CD-RW/DVD-R |
| Graphics Card | ATI RAGE Pro 128/16MB | NVIDIA GeForce2 MX/32MB | NVIDIA GeForce2 MX/32MB | NVIDIA GeForce2 MX/32MB | NVIDIA GeForce2 MX/32MB |
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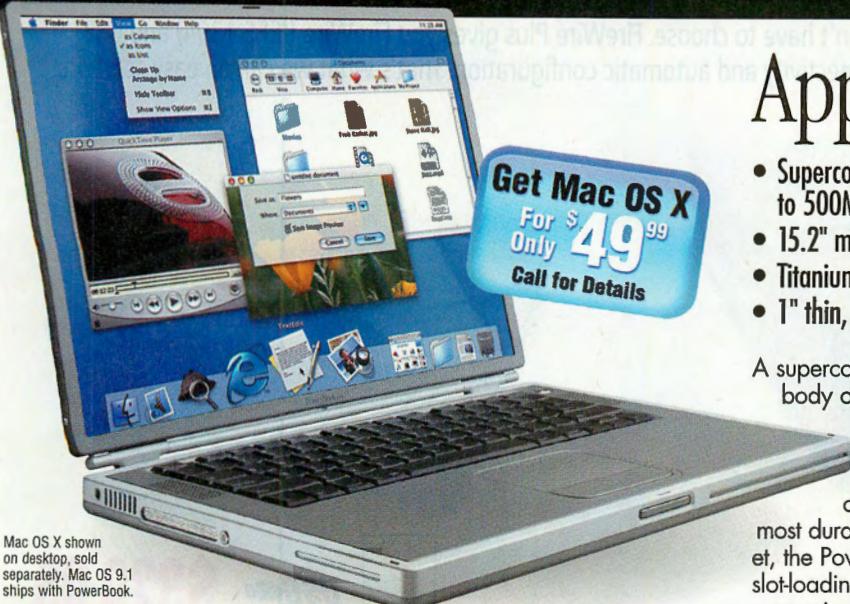
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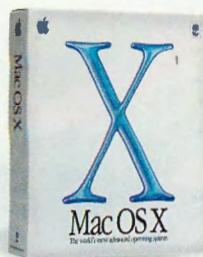
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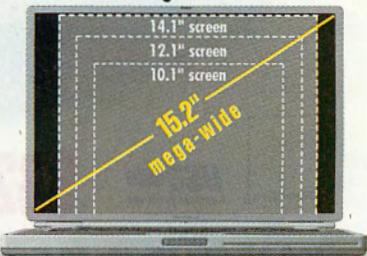
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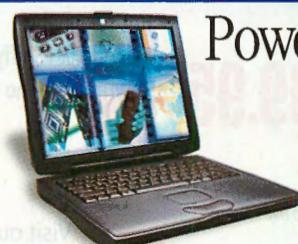
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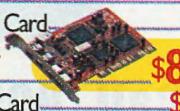
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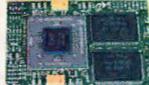
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- Apple Pro Optical Mouse & Keyboard
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Extra 128MB RAM FREE!

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| #957493 | 500 | Flower Power | 64MB | 128MB | 192MB | 20GB | Yes | Yes | Yes | \$1,194 | \$34/mo |
| #957492 | 500 | Blue Dalmatian | 64MB | 128MB | 192MB | 20GB | Yes | Yes | Yes | \$1,194 | \$34/mo |
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| #957496 | 600 | Flower Power | 128MB | 128MB | 256MB | 40GB | Yes | Yes | Yes | \$1,494 | \$42/mo |
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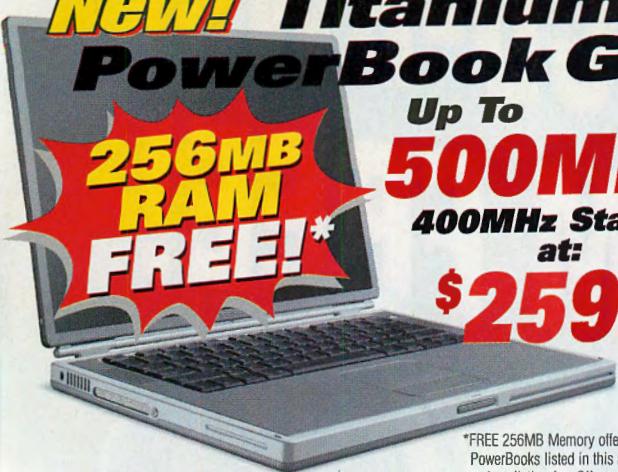
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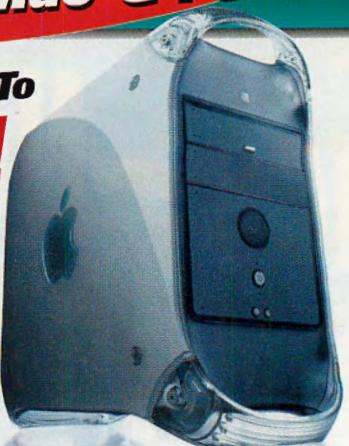
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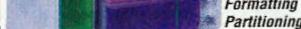
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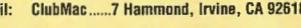
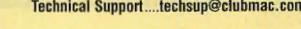
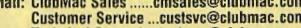
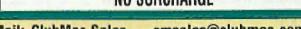
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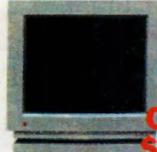
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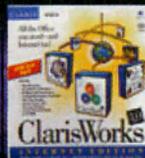
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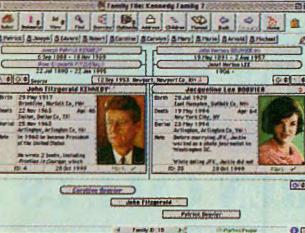


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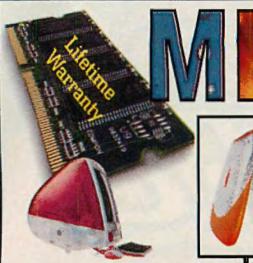


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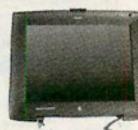


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Oh, heck—another page here at the back! We'd better fill it with something.

Rejected Materials

NaBook? Nah!

In one of our regular dumpster-diving sessions outside Apple's Cupertino, California, headquarters, we came across these documents. They shed some light on the huge design effort that led to the selection of titanium for the exterior of Apple's newest PowerBooks. Take a look and marvel at what might have been.

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MATERIAL: LEAD

ACCEPTED
REJECTED

REASONS:

MATERIAL IS SOFT. UNABLE TO LIFT POWERBOOK WITHOUT MECHANICAL ASSISTANCE. SMALL CHILDREN ATTEMPT TO EAT POWERBOOK IN TESTS.

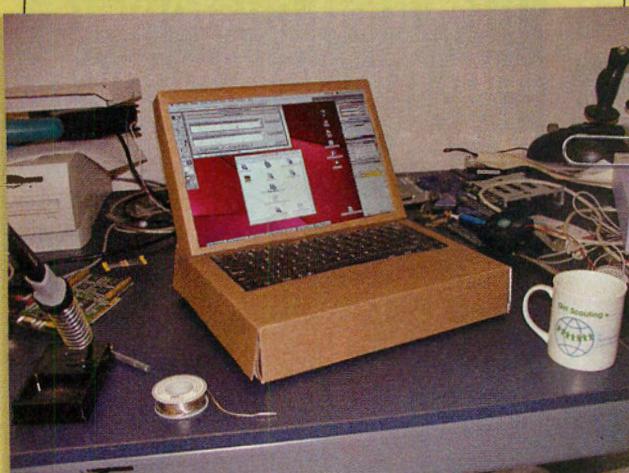
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MATERIAL: CARDBOARD

ACCEPTED
REJECTED

REASONS:

IN TESTING, USERS RIP POWERBOOK TO SHREDS WHILE OPENING PACKAGE



APPLE MATERIALS TESTING FACILITY SUITABILITY REPORT

MATERIAL: MERCURY

ACCEPTED
REJECTED

REASONS:

POWERBOOK FLOWS AWAY... AWAY, LIKE ALL THE PRETTY FLOWERS FLOW IN THE SPRING. OH, THE PURPLE LUCID DREAMS...



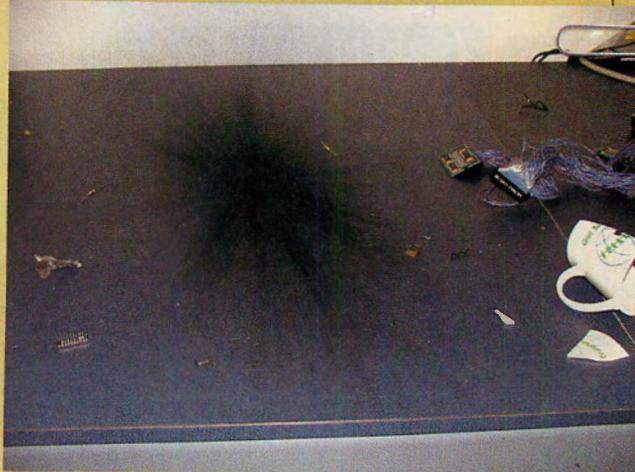
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MATERIAL: SODIUM

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REASONS:

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